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ABSTRACT

This report provides a formative analysis of youth demographics and employment and training issues in the state of Arizona. The report clarifies issues of workforce supply and demand--as they pertain specifically to Arizona's youth--and explores the match between work force demand and training programs. It is based on information gathered and synthesized on demographic and geographic trends describing Arizona's youth population, employment trends and labor market information, and information about existing work force preparation programs that serve Arizona's youth. The report concludes that, although the composition of Arizona's youth and the composition of Arizona's future job market suggest that there will be no mismatch between supply and demand, the match suggested is one between uneducated or undereducated workers with unskilled and semi-skilled jobs. In an era of equal opportunity, the statistics paint a picture of inequality. In disproportionate numbers, poverty, minority status, and poor academic standing are associated. The report suggests that education should be improved to prepare students for higher-level technical jobs. The report includes 13 tables and 14 figures, and 4 appendixes providing information on the following: (1) students with disabilities by type of disability; (2) public sector vocational-technical education programs; (3) Arizona employment program summary; and (4) economic conditions in Arizona. Contains 128 references. (KC)

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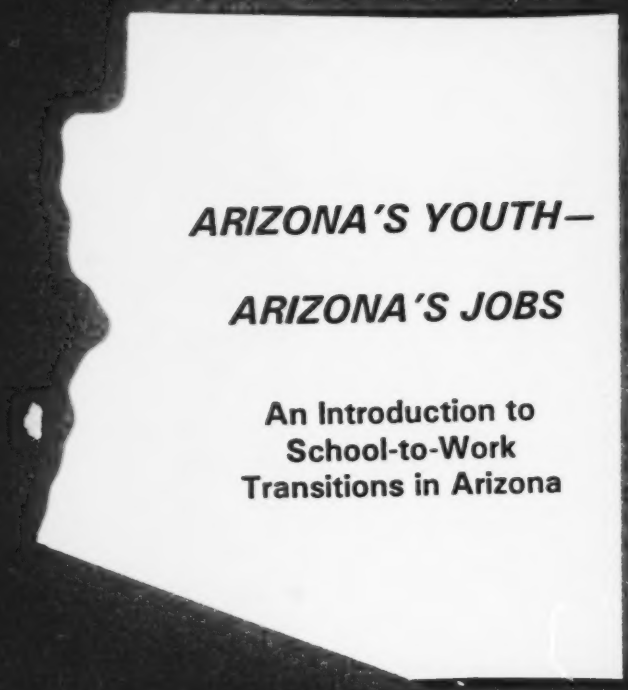

ARIZONA'S YOUTH—

ARIZONA'S JOBS

An Introduction to School-to-Work Transitions in Arizona

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Morrison Institute for Public Policy
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Arizona State University

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Prepared by

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March 1995

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Job Corps
JOBS
Job Training Partnership Act
Labor's Community Service Agency
Maricopa County Community Colleges
National Association of Partners in Education
Occupational Information System of Arizona
Phoenix Union High School District
State Apprenticeship Council
State Board of Directors for Community Colleges of Arizona
Tucson Unified Schools.

We apologize if we inadvertently have omitted others who contributed.

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INTRODUCTION

For the majority of the 20th century, a high school diploma was all one needed to enter the workforce and earn a decent living. This is no longer the case. Levels of educational attainment are integrally linked with earning potential. Lower levels of education = lower wages; higher levels of education = higher wages.

Many economic forecasters see the relationship between education and earning potential as becoming even stronger in the future. Why? Because America's economic livelihood is viewed as increasingly dependent on individual and organizational abilities to market knowledge and information instead of manual labor and goods.

Such trends give rise to escalating concerns over high numbers of high school dropouts, non-college-bound youth, and young adults who fail to complete postsecondary training—a disproportionate number of whom are minorities. Some of these young people—ages 16 through 24—are on the streets. Others are seeking entry into the workforce. Still others may be employed as entry level workers.

Wherever they are or whatever they are doing, undereducated members of this age group are often characterized—

> ...as having poor job skills.
>
> ...by high rates of unemployment and low paying jobs.
>
> ...as contributing to climbing incidents of social problems such as juvenile crime and teenage pregnancy.
>
> ...as one group among many that constitute an increase in the number of people living in poverty.

These problems are associated with a myriad of educational, economic, and social welfare programs, the burgeoning of which has spawned criticism of a "non-system" of services at national, state, and local levels. At best, this non-system is viewed as delivering services of questionable efficacy. At worst, it is censured for wasting human and financial resources through fragmented and duplicative efforts.

Dismay with the ballooning bureaucracy of youth services parallels growing discontent with the performance of public education. Coupled with business-industry dissatisfaction with the skill levels of entry-level workers, demands to reform education have deepened.

In this multifaceted context, school-to-work transition is a concept whose time has come. School-to-work transitions represent an investment in our nation's youth. One part education reform and one part workforce development, improved transitions are envisioned as a promising venue for countering a diversity of youth-related problems.

Young people symbolize America's future. Their successes will determine our nation's prosperity; their failures, its demise.

SCHOOL-TO WORK TRANSITION DEFINED

> *School-to-work transition refers both to individual journeys and to institutional processes. For individuals, it describes the gradual development of the maturity and the academic and occupational skills required to move from the status of student to that of solidly employed worker. It also describes the programs, services and avenues available through education, training, the workplace and the labor market itself, which together provide the preparation, training, experiences and opportunities available to youth as they attempt the transition (de Lone, 1992, p. 223).*

School-to-work transitions are means of facilitating the passage of young adults from pupils to wage earners. Such facilitation is viewed in two ways. First, it means helping young people develop attitudes and skills appropriate for advanced training and the workplace. Second, it means promoting congruency among currently divergent public and private sector policies and programs.

As part of the systemic reform of American public education, school-to-work programs are seen as a vehicle for integrating theoretical (i.e., academic) and applied (i.e., vocational) knowledge and skills. They are viewed as a means to assist *all* students—college and non-college bound—to make better decisions that will affect their future economic livelihood and well-being. Programs are envisioned that will motivate students—especially those who are likely to drop out or have already dropped out—to stay in or return to school.

As one component of a comprehensive plan for workforce development, improved transitions are viewed as a means to counter criticism of the entry-level skills of young workers. They are seen as a proactive measure in anticipation of changes in the world economy that will necessitate a new kind of worker.

Multiple and diverse long term impacts are expected to result from improved transitions. Simply put, greater numbers of youth who complete high school with clear career goals, work-oriented attitudes, and specific job competencies are anticipated to both lower youth unemployment rates and raise enrollment in postsecondary training institutions. This implies that more young people will develop skills and abilities—on-the-job or through advanced education and training—that are increasingly valued by education and business-industry communities alike as those necessary to retool America's workforce. In short, they will be equipped to become economically self-sufficient and will contribute to both gross domestic product and public revenues.

Greater numbers of productively engaged youth mean that fewer will be on the streets. This could reduce the incidence of social problems associated with young people (e.g., gang violence). If such problems can be alleviated, this should lessen the demand for the countless programs that have sprung up to deal with them. Greater numbers of young people attaining higher levels of education and training than in the past should lead to greater numbers eligible for more meaningful employment opportunities and, it is hoped, fewer living in and, ultimately, raising children in poverty.

Such are the promises of improved school-to-work transitions.

The School-to-Work Opportunities Act of 1994

The School-to-Work Opportunities Act of 1994 is the most comprehensive proposal to date for improving the preparation of young people for the world of work. As embodied in this act, tenets of improved preparation include broader-based and higher quality programming options for students in three areas:

- school-based programs,
- work-based experiences, and
- activities designed to link school and workplace learning.

In addition to better student programs, the act promotes the planning and development of statewide "School-to-Work Opportunities" *systems*. Systems are envisioned that would consolidate or integrate public and private sector workforce preparation programs into a coherent whole through actions such as revamping governing bodies and/or funding mechanisms and developing new kinds of partnerships between schools, businesses, and state agencies.

Planning for School-to-Work Transitions in Changing Times

With the political realignment of the 94th Congress, the future of many education and employment training programs is subject to question. To illustrate this point, in January 1995, Senator Kassebaum introduced the Job Training Consolidation Act of 1995 for the purpose of consolidating some "154 separate job training programs, administered by 14 different agencies, at a total cost to the taxpayers of almost $25 billion a year" (*Congressional Record*, January 4, 1995). If enacted, this proposed legislation would repeal 13 previously enacted provisions. These include, notably, the School-to-Work Opportunities Act of 1994, the Job Training Partnership Act, and the Carl D. Perkins Vocational and Applied Technology Education Act.

On the heels of Kassebaum's proposal, Senator Kennedy outlined The Workforce Development Act (*Congressional Record*, January 9, 1995). Similar to the proposed consolidation initiative, Kennedy's proposal would streamline the job training bureaucracy. This act, too, calls for repealing a number of job training provisions; notably, the Perkins Act and school-to-work initiatives would be spared.

Change is clearly forthcoming. Yet while newly proposed legislation (if enacted) could alter the policy/programmatic context of school-to-work opportunities, new initiatives neither explicitly undermine the importance of improved transitions nor abolish the need to more conscientiously plan for improved transitions. Rather, new proposals appear to offer more autonomy for states to design comprehensive workforce development plans and priorities customized to meet state needs. No comprehensive plan can afford to overlook youth.

PURPOSE OF THIS REPORT

Whether as a separate program, or as part of a comprehensive workforce development plan, school-to-work transitions offer avenues for preparing young people for work. What are these avenues? For whom are they designed? Where does the journey lead? These questions and others are the subject of this report.

Prepared by the Morrison Institute for Public Policy, School of Public Affairs, Arizona State University, this document provides a formative analysis of youth demographics and employment and training issues in the state of Arizona. The original catalysts for this analysis were the passage of the *School-to-Work Opportunities Act of 1994* and Arizona's receipt of a federal grant to develop a strategic plan for implementing a statewide school-to-work system.[1] Additional motivation stems from broader public and private sector interest in developing comprehensive workforce development strategies, of which improved transitions are a part.

The report is intended to elucidate issues of workforce supply and demand—as they pertain specifically to Arizona's young people—and to explore the match between workforce demand and training programs. In order to accomplish these aims, three types of information were gathered and synthesized: demographic and geographic information relevant to describing Arizona's youth population, employment trends and labor market information, and information germane to existing workforce preparation programs that serve Arizona's youth.[2]

The report is *not* intended as a blueprint for creating improved school-to-work opportunities in Arizona. Rather, it is intended to introduce issues of supply and demand that should be taken into consideration in crafting a more coherent and efficient *system* of school-to-work opportunities.

1. The strategic plan is being developed under the auspices of the Governor's Office of Community Programs and Public Outreach.

2. In compiling information, some new analyses were conducted. However, the report relies primarily on facts and figures excerpted from a variety of sources that are noted throughout the text. The reader is advised that information summarized from source documents is subject to the caveats of the original research.

ARIZONA'S YOUTH— THE WORKFORCE OF TOMORROW

Who is targeted for improved school-to-work transitions? Within the parameters set forth by the School-to-Work Opportunities Act of 1994, systems are promoted which consider the needs of *all* students (e.g., young women, low achieving students, students with disabilities, school dropouts, and academically talented students). Thus, all students—whether or not college-bound—would conceivably exit high school with clear career goals and the formal knowledge and skills necessary to pursue advanced education or training necessary to attain their career goals.

Targeting all students is an appropriate and worthy goal. And yet, a compelling part of the argument for improved school-to-work transitions stems from enhancing the career opportunities for the "forgotten half." These are the students for whom traditional college preparatory education is inappropriate...for whom career prospects are uncertain...about whom businesses are concerned because they lack skills.

One goal of this section is to describe Arizona's students collectively. A second goal is to develop a sense of some of the subgroups that make up "all students." This discussion seeks to identify those who would receive services and stand to benefit from improved school-to-work opportunities.

WHO ARE ARIZONA'S STUDENTS?

Overall, based on 1993 figures, there were slightly over one million children (ages birth-17) living in Arizona, representing over one-quarter of the state's total population (27.3 percent). Of these million children, 58 percent were White. Hispanic children constituted the largest minority (29 percent), followed by Native American children (eight percent). Four percent of Arizona's children were African Americans; all other minorities account for the remainder of the child population.

In 1992-1993, 70 percent of Arizona's one million children were reportedly enrolled in either private (3 percent) or public (67 percent) schools in grades kindergarten through twelve. Public schools served children in 222 school districts statewide through 935 elementary schools and 173 high schools.

Of the total *public* school enrollment of 732,306 students (FY 1992-93), 59 percent were in grades kindergarten through six; 41 percent were in grades seven through twelve. Moreover:

- Of the total school enrollment for the 1992-93 academic year, 8.5 percent participated in public school programs for the gifted and talented (n = 62,379 students in grades K-12).

Other Facts About Arizona's School-Age Children/Teens

- ✓ Arizona high school students graduate at higher rates than the national average.[a]
- ✓ Average Arizona ACT College Entrance Exam scores are higher than the national average.[a]
- ✓ Arizona was 12th highest in the nation for having computers available in eighth grade math classrooms.[a]
- ✓ During 1992-93, nearly 14,000 migrant students were served—an increase of 4.8 percent since 1990.[b]
- ✓ Births to teenage girls have increased over time. In 1992, nearly 7,000 young women gave birth—a 9.5 percent increase since 1990.[b]
- ✓ Rates of teen suicide in Arizona (13.4 per 100,000) exceed the national average (11.1 per 100,000).[b]
- ✓ The number of juvenile arrests for violent crimes rose by 13.5 percent between 1990 and 1993.[b]

Sources:

a) U.S. Data on Demand, Inc., *States in Profile*, 1993

b) Bierlein & Mulholland, *Kids Count Factbook: Arizona's Children*, 1994

- ♦ Nine percent of the total school enrollment were identified as students with disabilities (n = 66,009 students in pre-K through 12).
- ♦ *Excluding* students referred to special education, about 40 percent of the total school population were identified as "low achievers" based on their performance on norm-referenced achievement tests of language, math, and reading.
- ♦ Nine percent of the junior/senior high school population dropped out of school *during* the school year (n = 27,877 students in grades 7-12).

School enrollment is anticipated to climb through the year 2000 and beyond as a result of a growing child population. This growth is attributable to Arizona's birth rate (17.8 per 1000 population, which exceeds the national average) as well as to people moving into the state from other states and countries—primarily Mexico.

Who could potentially benefit from improved school-to-work transitions in the near future? In order to answer this question, estimates of Arizona's future adolescent school-age population—the key population targeted for improved school-to-work opportunities—were developed by Morrison Institute researchers. Projected numbers of youngsters by grade level are provided in Table 1 for the years 1995 through 2000. The table indicates that over two million young people (ages 12-18) will be of school age between 1995 and 2000 (although not *everyone* will be enrolled in school). A vast majority of these children will be served by public education.

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Table 1.

Arizona's Junior/Senior High School Student Population: Estimates By Grade for the Years 1995-2000

Year	Grade (Ages*)						Total Jr/Sr HS Population
	7 (12-13)	8 (13-14)	9 (14-15)	10 (15-16)	11 (16-17)	12 (17-18)	
1995	59,836	58,879	60,739	58,694	55,983	54,940	**349,071**
1996	60,548	60,911	60,045	61,857	59,738	57,000	**360,099**
1997	61,913	61,599	62,044	61,227	62,910	60,661	**370,354**
1998	64,130	62,840	62,689	63,173	62,324	63,821	**378,977**
1999	64,913	65,063	63,837	63,837	64,284	63,346	**395,309**
2000	66,145	65,886	64,948	64,948	64,969	65,318	**393,366**
TOTAL	**377,484**	**375,176**	**375,479**	**373,736**	**370,208**	**365,086**	**2,237,169**

* Figures were derived using single-age population census data (adjusted for deaths and in-migration) as baseline information. Grade level estimates were calculated by taking ¾ of one age group plus ¼ of the next higher age group to approximate the distribution of students *at the beginning of a school year*. For example: students entering grade seven = three-fourths the population of 12-year olds and one-fourth the population of 13-year olds and so on. The ¾ to ¼ ratio gives a more precise estimate of grade level populations than can be gleaned using single age population estimates alone.

Source: Morrison Institute for Public Policy

Census data were analyzed by gender for the population shown in Table 1. Trends indicate a relatively stable distribution of males (51 ± 1 percent) and females (49 ± 1 percent) through the year 2000.

The overall racial/ethnic composition of Arizona's student population will reflect an increase in the number of minorities over time, particularly in Hispanic students. However, the overall distribution of students by race/ethnicity—currently 58 percent White and 42 percent minority—is unlikely to change dramatically through the year 2000. That is, based on growth rates by race/ethnicity observed between 1980 and 1990, and 1990 and 1993, the composition of Arizona's student body should remain predominately White, with Hispanic students the largest minority constituency.

Figures in Table 1 also were examined with respect to Arizona's public education track record. For example:

- If graduation rates hold constant, about 290,000 of the *high school seniors* shown in Table 1 will graduate from high school between 1995 and 2000.
- On the other hand, over 250,000 teens will likely drop out of school at some point *between seventh and twelfth grade* by the year 2000.

- Furthermore, based on recent dropout statistics, dropouts are likely to overrepresent minorities (Table 2).

WHERE ARE ARIZONA'S STUDENTS?

The *School-to-Work Opportunities Act of 1994* promotes state systems for school-to-work transitions that address the needs of students in both urban and rural areas. Specifically, state plans are expected to describe how they will serve students from rural communities with low population densities. Therefore, this section examines the geographic distribution of Arizona's students.

Arizona is the sixth largest state in the union with 114,000 square miles divided into 15 counties. It is a land of geographic extremes from the Grand Canyon and White Mountains in the north to the Sonoran Desert in the south. Notably, about 83 percent of Arizona land is owned by federal, state and Indian authorities. For example, 21 Native American reservations account for more than one-quarter of the state's total territory, occupying over 20 million acres of land (see Figure 1).

The distribution of Arizona's children is no less extreme than its geography. Figure 2 depicts Arizona's child population density in terms of children (ages birth-17) per square mile by county. As shown by this map, the lowest population densities are in the northern and eastern parts of the state. Overlaying Figure 1 on Figure 2, one notes that a significant portion of the rural, low population density areas are encompassed by Native American reservations.

Table 2.

Arizona High School Dropouts as Percent of Racial/Ethnic Population* (1992-93)

Race/Ethnicity	Dropout Rate
White	9.7%
Hispanic	16.9%
Native American	17.6%
African American	16.2%
Other	7.0%

* Depicts the percentage of high school dropouts within a given racial/ethnic group (e.g., of all white students in grades 9-12, what percent dropped out that year).

Source: Bierlein & Mulholland, *Kids Count Factbook: Arizona's Children*, 1994

Not surprisingly, the highest child population densities are associated with the urban growth centers of Phoenix in Maricopa County (with 67 children per square mile) and Tucson in Pima County (with 20 children per square mile). In fact, Maricopa and Pima Counties combined account for nearly three-fourths of the children in the state (74.2 percent in 1993).

Figure 1.

Native American Reservations in Arizona

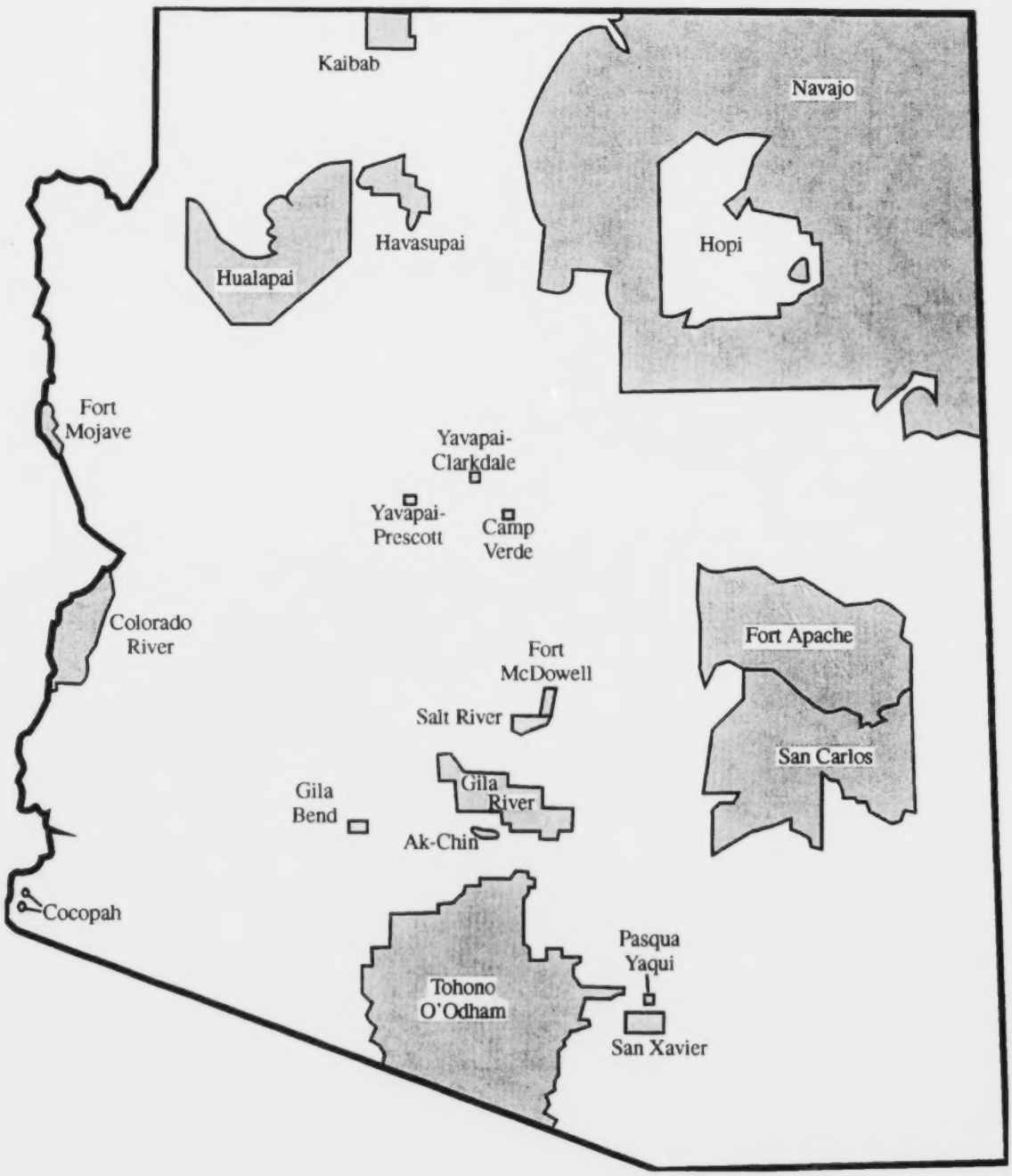
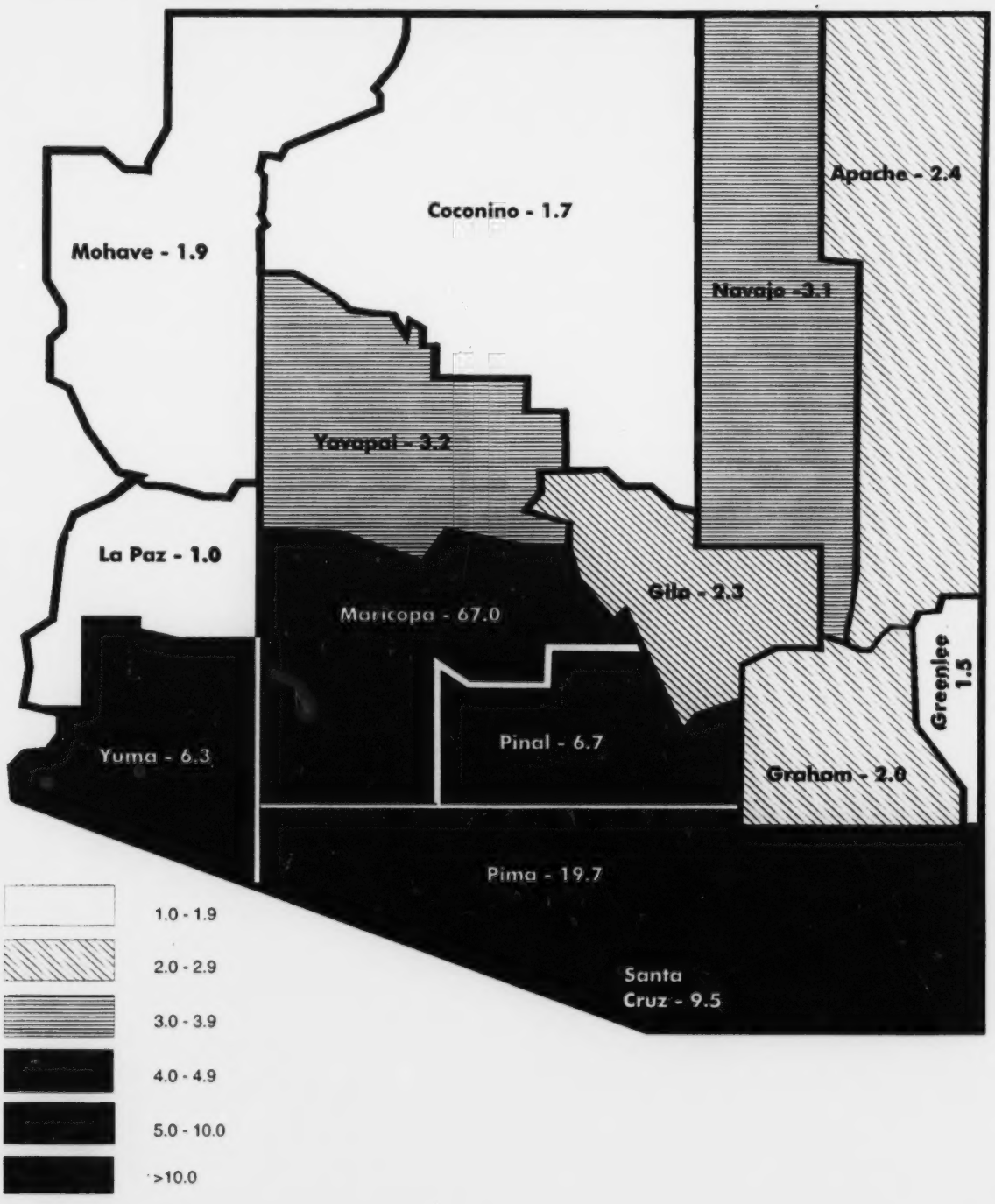


Figure 2.

Arizona's Child (Birth-17) Population
Density Children/square mile



Nine of Arizona's 15 counties have child populations that are predominantly minority (Table 3 and Figure 3). At one end of the spectrum, 89 percent of Santa Cruz's total child population is minority, with 88 percent being Hispanic. At the other end of the spectrum, Mohave County has the lowest percentage of minority children. Overall, Native Americans compose the largest minority group in the northern half of the state; those of Hispanic descent represent the dominant minority in the southern half.

Table 3.

Percentage of Minority Children (Ages Birth-17) by County

County	Total % Minority	% Dominant Minority
Santa Cruz	88.9	88% Hispanic
Apache	84.9	80% Native American
Navajo	69.2	61% Native American
Yuma	65.0	60% Hispanic
La Paz	62.6	38% Hispanic
Coconino	54.8	42% Native American
Pinal	54.7	41% Hispanic
Greenlee	51.9	49% Hispanic
Graham	50.1	27% Hispanic
Cochise	48.5	39% Hispanic
Pima*	47.6	38% Hispanic
Gila	45.0	25% Hispanic
Maricopa*	35.1	26% Hispanic
Yavapai	14.5	11% Hispanic
Mohave	13.4	9% Hispanic

* Urban counties

Source: Morrison Institute for Public Policy

Concentrations of minorities in Arizona's rural counties obscure the fact that the proportional growth of minorities has been most notable in the state's urban areas. Table 4 illustrates this point, showing percentages of children by race/ethnicity in urban and rural areas over time.

Table 4.

Urban-Rural Distribution of Children (Ages Birth-17) by Race/Ethnicity

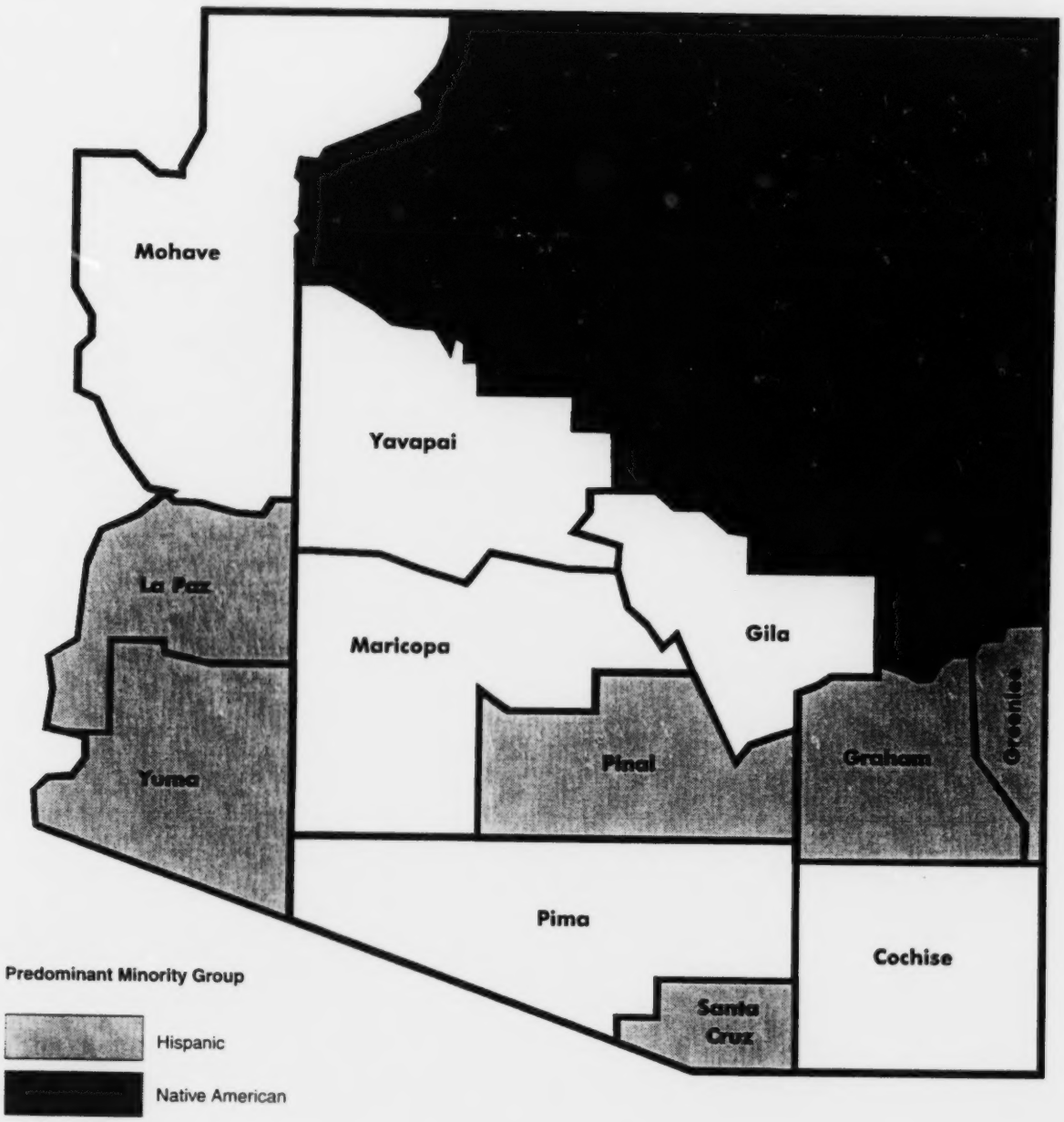
	1980	1990	1993
Urban (Maricopa and Pima Counties)			
White	70%	64%	62%
Hispanic	23%	27%	29%
Native American	2%	3%	3%
African American	4%	4%	4%
Other	1%	2%	2%
Rural (All other counties)			
White	50%	47%	47%
Hispanic	24%	27%	28%
Native American	23%	23%	23%
African American	2%	2%	2%
Other	1%	1%	>1%

Source: Morrison Institute for Public Policy

The critical issue about changing urban and rural demographics is the impact that the student composition has on schools and communities. For example, as urban student populations have become more racially and ethnically mixed, issues of cultural diversity have become prominent and the demand for services has magnified in order to accommodate diverse needs. By comparison, many rural areas are inherently culturally diverse and have longer—if not more successful—histories of dealing with diversity.

Figure 3

Arizona Counties With 50% or More Minority Children



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Finally, Table 5 on the following page presents information by county regarding four groups of special interest identified in the School-to-Work Opportunities Act of 1994: academically talented students, students with disabilities, low achieving students, and dropouts. As shown in Table 5, percentages of students identified as gifted range from a high of 12 percent of the K-12 population in Gila County to a low of 2.3 percent of the student body in Graham County. Gila County also reported the highest percentage of students with disabilities (11.9 percent of the student population). Santa Cruz County reported the lowest number of disabled students served (6.5 percent).

Regarding low achieving students, Apache County records the state's highest overall percentages of such students; Mohave County the lowest overall percentages. Lastly, La Paz County figures indicate the highest percentage of dropouts (18.3 percent); the fewest dropouts were reported for Greenlee County (4.7 percent).

Table 5.

Geographic Distribution of Special Populations (School Year 1992-93)

	County Enrollment (FY 1992-93)[a]	% Gifted and Talented Students[b]	% Students with Disabilities[c]	% Low Achieving Students[d] L = language M = math R = reading			% Dropouts[e]
				L	M	R	
Arizona Average	–	8.5	9.0	39	42	41	12.4
Apache	16,498	6.5	7.9	68	64	64	13.8
Cochise	23,184	5.8	10.0	58	49	43	11.0
Coconino	21,567	6.7	8.8	54	42	42	9.8
Gila	9,605	12.0	11.9	55	55	51	14.3
Graham	6,344	2.3	8.3	46	45	46	6.9
Greenlee	2,595	4.8	7.4	46	44	39	4.7
La Paz	3,532	4.4	9.7	65	56	55	18.3
Maricopa	440,312	9.3	8.1	48	39	39	12.5
Mohave	21,397	4.5	10.0	42	44	39	16.0
Navajo	19,862	6.4	9.4	57	58	52	9.5
Pima	125,065	6.4	8.7	51	45	43	12.6
Pinal	27,565	5.0	10.7	59	54	51	16.7
Santa Cruz	8,568	5.1	6.5	65	57	56	17.2
Yavapai	20,809	7.7	8.9	50	38	34	10.0
Yuma	29,310	8.9	7.9	53	56	56	10.6

a) Source: Arizona Department of Education, *Statistical and Financial Data for Fiscal Year 1992-93*

b) Source: Arizona Department of Education, *Statistical and Financial Data for Fiscal Year 1992-93*

c) Source: Arizona Department of Education, Special Education Section
[For a breakdown of the specific types of disabilities included in this category, see Appendix A.]

d) Source: Bierlein & Mulholland, *Kids Count Factbook: Arizona's Children*, 1994
[Percentages represent students scoring below the 40th percentile on state-administered norm-referenced tests. Scores are for students taking the tests in Fall 1992].

e) Source: Bierlein & Mulholland, *Kids Count Factbook: Arizona's Children*, 1994

NOTE: Figures provided in this table are not strictly comparable due to variations in source materials (e.g., raw numbers and methods of calculation).

ARIZONA FAMILIES, EDUCATION AND EARNINGS: WHAT ARE SOME RELATIONSHIPS?

Arguments that posit a relationship between earnings and education are widespread and central to the rationale behind the school-to-work movement. Given that Arizona's per capita personal income of $16,594 is below the national average of $19,091, it is informative to examine some of the relationships among families, earnings and education. Furthermore, looking at such relationships helps one to understand Arizona's children in context.

One type of household frequently mentioned in the literature are those maintained by single women. For Arizona, 1990 census data indicate that 19 percent of the state's households are of this type. And of these households, 56 percent are living in poverty.

Female single-parent households disproportionately represent minorities (Table 6). This is significant given findings that minority single-parent females have lower labor force participation rates and higher poverty rates and unemployment rates than their white counterparts (Silvers, 1991, p. 16).

Additionally, many children live in families headed by undereducated adults. For example, nine percent of all Arizona's households are headed by someone with less than a ninth grade education. Within individual counties, there are notable relationships among percentages of undereducated head-of-households, rates of unemployment, and per capita income.

Table 6.

Arizona Female Single-Parent Households by Race/ Ethnicity

Race/Ethnicity	Percent
White	16.8%
Hispanic	21.1%
Native American	29.4%
African American	37.8%
Other	19.3%

Source: 1990 Census Data

Table 7 compares the average unemployment rate and per capita income for the three counties with the highest percentages of families headed by someone with less than a ninth grade education to three counties with the lowest percentages of undereducated head-of-households.

Conspicuously, the highest percentages of undereducated heads-of-households are located in counties with among the highest percentages of minority children (compare with Table 3). Conversely, the lowest percentages of undereducated heads-of-households are located in the three counties with the lowest percentages of minority children.

Table 7.

Comparison of Arizona Counties: Highest versus Lowest Percentages of Undereducated Adult *Heads-of-Households*

	Three counties with the **highest** percentages of undereducated heads-of-households (Apache, Santa Cruz, Yuma)	Three counties with the **lowest** percentages of undereducated heads-of-households (Yavapai, Mohave, Maricopa)
Average percentage of families headed by someone with less than a ninth grade education	26.9	7.2
Average unemployment rate	18.0	6.6
Average per capita income	$11,074	$15,226

Source: Morrison Institute for Public Policy

WHAT BECOMES OF ARIZONA'S STUDENTS?

What happens to Arizona high school graduates? How many *do* enter the workforce? Unfortunately, consistent and reliable statewide data about post-high school outcomes are not readily available.

However, the Arizona Auditor General recently conducted a follow-up study of 1985 Arizona university freshmen (i.e., students graduating from high school in spring 1985). Tracking full-time students only, this study found that of the registered freshmen, over one-quarter did not return for their sophomore year; approximately half (46 percent) left the university without graduating by the end of six years and about 5 percent were still enrolled after six years (Arizona Auditor General, 1994).

This study tends to corroborate national studies which have shown that about half of all high school graduates plan to attend—but do not complete—a four-year institution. Of the 50 percent who enter four-year institutions, only about 25 percent earn a baccalaureate degree within six years (cf. Brustein & Mahler, 1994). An additional 25 percent have earned an associate degree, while the remaining 50 percent are presumably unskilled or unaccounted for. Figure 4 graphically illustrates the "mismatch" between high school graduates' plans and obtained outcomes.

Figure 4.

Mismatch Between Postsecondary Plans and Outcomes

Postsecondary **Plans**	Postsecondary **Outcomes**
No Degree 25%	? 25%
Technical Training 25%	Unskilled 25%
4-Year Degree 50%	Associate Degree 25%
	4-Year Degree 25%

Source: Brustein & Mahler, *AVA Guide to the School-to-Work Opportunities Act*, 1994

Using national statistics, one can hypothesize outcomes for the 290,000 projected Arizona students in the six years following high school graduation. For example, between 1995 and 2000 one might expect that:

- 72,500 graduates will have attained a baccalaureate degree.
- 72,500 graduates will have attained an associate degree.
- 145,000 graduates will enter the job market as unskilled laborers.

This is Arizona's workforce of tomorrow. These are the young people who are Arizona's future.

ARIZONA'S JOBS— EMPLOYMENT OPPORTUNITIES FOR THE YEAR 2000 AND BEYOND

With some idea of who will compose Arizona's future workforce, attention now focuses on the nature of the work that will be available. Job market/employment information typically is reported for eight sectors of the economy (excluding agriculture) including:

- Construction
- Finance, Insurance and Real Estate (FIRE)
- Government (including federal, state, and local)
- Manufacturing (including durable goods, e.g., machinery, and nondurable goods, e.g., printing and publishing)
- Mining
- Services (including business services, health services, and hotels/motels)
- Trade (including wholesale trade and retail trade, e.g., department stores, food stores, automotive trade, and eating and drinking establishments)
- Transportation, Communications and Public Utilities (TCPU).

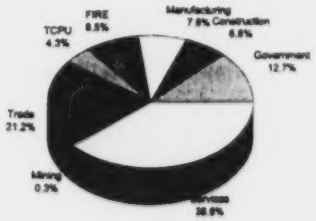
The following sections examine forecasted job growth in these sectors of Arizona's economy.

WHAT ARE ARIZONA'S JOBS OF THE FUTURE?

A report distributed by the Arizona Department of Economic Security—*On the Edge of the 21st Century*—(Silvers, 1991) predicts that Arizona's civilian employment will grow at an annual rate of 3.77 percent, from 1.63 million in 1990 to 2.36 million by the year 2000. Analysts state that Arizona's employment growth will parallel that for the nation as a whole—with continued relative declines in manufacturing and overall increases in trade and services. These increases are depicted graphically in Figure 5, which illustrates the percent share of expected new jobs by sector.

Figure 5.

Percent Share of Expected New Non-farm Wage and Salary Jobs in Arizona by Industry, 1990-2000



Source: Silvers, *On the Edge of the 21st Century*, 1991

In the same report, DES analysts also estimated that 730,000 jobs will be created during the years 1990-2000. Applying the percentages of new job growth (from Figure 5) to the projected 730,000 new jobs, one *might* anticipate:

- 281,780 new jobs in services
- 154,760 new jobs in trade
- 92,710 new jobs in government
- 62,050 new jobs in FIRE
- 55,480 new jobs in manufacturing
- 49,640 new jobs in construction
- 31,390 new jobs in TCPU, and
- 2,190 new jobs in mining.[3]

Tables 8 and 9 provide more specific information about the kinds of jobs that will be available. Table 8 shows the top 15 *industry groups* and Table 9 shows the top 15 *occupations*—each ranked by forecasted job growth.

DES analysts point out that the fastest growing jobs in the service-producing industries are typically lower paying than the goods-producing industries of manufacturing, mining, and construction.

Table 8.

Top 15 Industry Groups in Arizona, Ranked by Forecasted Job Growth, 1990-2000

Industry Group	New Jobs	Percent Increase
Business services	97,300	78.5
Health services	48,400	46.3
Eating, drinking places	46,000	43.5
Schools	45,000	38.4
Real estate	34,000	35.0
Construction	24,400	20.3
Hotels and motels	20,600	47.0
Agricultural services	15,500	55.5
Insurance	12,800	39.0
Transportation equipment	11,500	42.6
Auto repair	9,800	40.8
Legal services	8,900	52.7
Air transportation	7,200	42.6
Printing and publishing	6,800	37.0
Investments	3,900	41.1

Source: Silvers, *On the Edge of the 21st Century*, 1991

In fact, DES analysts note that 11 of the 15 jobs in Table 9 are low paying and that a total of 42.7 percent of all anticipated new jobs will "be in the low-wage service, laborer, and clerical categories." Presumably, many low-wage jobs are the kinds of "entry-level" positions capable of being filled by high school graduates and others with low levels of educational attainment.

3. These estimates, intended to illustrate industry trends, are derived from employment forecasts for the ten-year period covering 1990-2000. Employment forecasts are updated regularly by the Arizona Department of Economic Security; the most recent (Fall 1994) forecasts corroborate the general trends reported in this document. For example, in the next two years (1994-95) increases in payroll jobs are expected in all industries except mining (cf. *Arizona Economic Trends*, Fall 1994).

Table 9.

Top 15 Occupations in Arizona, Ranked by Forecasted Job Growth, 1990-2000

Occupation	New Jobs
Retail salespersons	30,754
Waiters/waitresses	24,166
General managers/top executives	21,110
Fast-food workers	20,704
General office clerks	18,109
Cashiers	17,551
Secretaries	17,089
Bookkeeping clerks	16,970
Laborers/helpers (not elsewhere classified)	13,435
Janitors/cleaners	13,097
Sales representatives (not retail)	12,591
Registered nurses	12,265
Sales supervisors	11,099
Food-preparation workers	10,730
Light truck drivers (including delivery & route)	8,565

Source: Silvers, *On the Edge of the 21st Century*, 1991

Of course, not all job growth is confined to low-wage occupations. Roughly 15 percent of new job growth is anticipated in higher-paying industries. Growth in the manufacturing sector is particularly significant for Arizona's economy, since this is the sector most commonly affiliated with the notion of the "high performance" workplace (see *High Performance Work Organizations*).

High performance workplaces are viewed as holding promise for the future of the American economy, insofar as they are intended to increase productivity while lowering costs thus increasing economic competitiveness. Typically, they are also associated with higher wages.

High wages already characterize the overall nature of Arizona manufacturing. In 1990, Arizona's manufacturing payroll per employee exceeded the national average by 4 percent, with the highest per employee payrolls in the transportation and instruments industries (Center for Business Research, *Arizona Manufacturing in 1990*, no date).

Of 20 manufacturing sectors, four appear particularly significant in Arizona, as they accounted for over half of all of Arizona's manufacturing employment in 1990 (ibid.) These are: electronics and other electrical equipment, transportation equipment, instruments and related products, and printing and publishing. In part, these industries reflect the growth of "high-tech" enterprises.

However, according to Rex (1994b), there is no generally accepted definition of "high tech." Nevertheless, one can categorize businesses on the basis of their general nature and average wage level to make such a determination. Based on such criteria, Rex identifies five "high tech" industries in the manufacturing sector:

- computer and office equipment
- communications equipment
- semiconductors and related devices
- guided missiles, space vehicles, parts
- instruments and related products.

High Performance Work Organizations

High performance organizations (HPOs) have become synonymous with "state-of-the-art" workplaces in today's vernacular. Secretary of Labor Robert Reich, among others, has urged students to acquire the skills necessary to participate productively in such workplaces. Nevertheless, it appears that a widely shared understanding of the nature of HPOs has yet to evolve.

How did the concept of high performance organizations develop?

From the theoretical underpinnings of Frederick Taylor and Max Weber, mass production emerged as the means for American companies to generate profit. Mass production meant that workers performed narrowly defined, repetitive tasks (e.g., as on the assembly line) under layers of supervision without being required to assume responsibility for the quality of the end product. Unfortunately, product quality and worker satisfaction both became problems. Too many "rejects" were sent back to the line, lowering overall productivity and wasting human and financial resources. At the same time, labor costs rose. As international competition increased, U.S. companies found themselves at a disadvantage in competing with high quality, lower cost foreign products. Restructuring the American workplace became the new economic edict.

What is a high performance work organization?

Fundamentally, a high performance work organization is one that increases productivity while lowering production costs through alternatives to mass production. Most commonly, the HPO concept is associated with four elements which, combined in some form, serve to reorganize or restructure production: decentralized decision-making, production/work teams, quality control, and a consumer or market-based approach to providing goods or services.

The theory is this: When decision-making and quality control are decentralized and put in the hands of production teams, high quality goods are produced the first time around. As a result, companies realize higher productivity and decreased production costs (e.g., the need to rework defective products is eliminated; "end-of-line" inspection personnel and middle-level managers are no longer required). HPOs also are associated with enhanced job satisfaction because, for example, workers have more diverse tasks (less boredom) and less conflict with management (because they are more in control). Most often associated with high wage, high technology industries (e.g., microchip manufacturing; the aerospace industry), HPOs can and do exist in "low tech" non-manufacturing environments.

How widespread is the overall concept of the high performance organization?

Not very. A recent survey of 700 private, for profit firms (employing 50 people or more) found that while most firms employed at least one restructuring technique (e.g., teams) for *some* employees, relatively few involved a majority of their employees in high performance capacities (Osterman, 1994).

Using U.S. Bureau of Census data, Rex analyzed high-technology activities in Arizona. His findings included the fact that Arizona ranked 11th in the nation for the number of high-tech workers employed (with approximately 52,000 workers) and seventh in terms of the share of private-sector employment accounted for by high-tech activities (with a 4.2 percent share, compared with a national average of 2 percent). Furthermore, metropolitan Phoenix—the "Silicon Desert"—was identified as "one of the nation's high-tech centers" (Rex, 1994b).

While high-tech, or high performance, workplaces do add value to Arizona's economy, it is important to keep in mind that they account for only a small proportion of Arizona's jobs and presumably few, if any, "entry-level" positions for younger workers without education.

Morrison Institute researchers *did* attempt to identify the number of high performance workplaces in Arizona. Researchers were particularly interested in examining these, as the School-to-Work Opportunities Act of 1994 emphasizes the nature of programs for youth "that will require paid high-quality work-based learning experiences." Local industry and commerce organizations were queried about high performance workplaces in Arizona. Apart from anecdotes, no hard evidence regarding numbers or types of high performance workplaces in Arizona had surfaced as of the production of this report.

WHERE ARE ARIZONA'S JOBS OF THE FUTURE?

Figure 6 shows the distribution of labor by industry for urban (i.e., Maricopa and Pima Counties) and rural (i.e., the balance of the state) areas.[4] As illustrated by this figure, the overall proportion of labor accounted for by each sector is about the same in rural and urban areas.

Relatively speaking, however, the rural workforce has had a greater share of job opportunities in agriculture, construction, government, and mining than the urban workforce. Conversely, urban areas have provided relatively more opportunities for its residents in FIRE, manufacturing and services. The proportion of jobs provided by TCPU and trade are more-or-less equivalent in rural and urban areas.

In terms of job creation during the 1990s, both rural and urban areas should experience the most job growth in the trade and service sectors of the economy. In comparison with urban areas, however, rural areas are likely to experience a proportionately greater share of growth in government/public administration jobs. Illustrated in Figure 6, and further documented in Table 10, the government sector currently accounts for a greater share of rural employment; this trend is likely to persist in the future.

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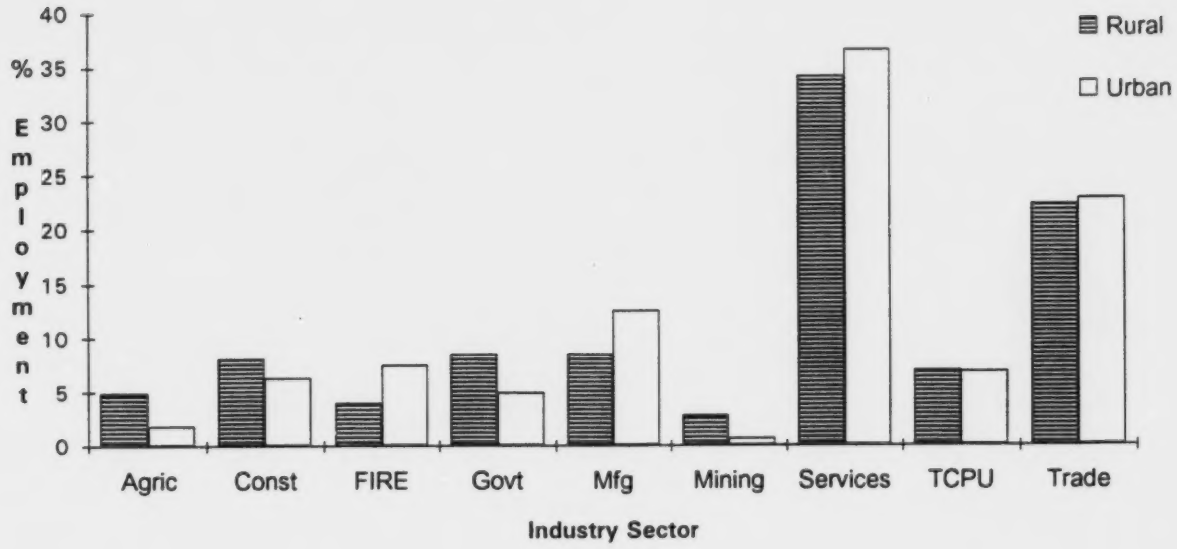
[4] More recent (1994) estimates of the Phoenix metro area include Pinal County (cf. *Arizona Economic Trends*, Fall 1994). Moreover, some reports include Yuma/Yuma County among the state's urban areas. For the purposes of this report, data are reported using the distinctions noted (i.e., using Maricopa and Pima counties as a proxy for urban areas versus the balance of the state).

Figure 6

Percent Share of Employment in Rural versus Urban Areas by Industry, 1990



Source: Morrison Institute for Public Policy; Adapted from statistics calculated by the Center for Business Research—see *Arizona Employment Shifted to Private Sector in 1980s*, no date

Table 10.

Urban-Rural Percent Share of Employment by Class of Worker (Persons 16 Years and Older)

Class of worker	Urban Counties (Maricopa and Pima)	Rural Counties (Balance of State)	Arizona
Private for Profit	70.5	62.8	70.8
Private non-profit	5.8	4.9	5.3
Government (Local, state, federal)	16.4	24.0	16.6
Self-employed	6.9	7.9	7.0
Unpaid family	.4	.4	.4
	100.0	100.0	100.1

Source: Center for Business Research, calculated using 1990 census data—see *Arizona Employment Shifted to Private Sector in 1980s*, no date

Overall, Table 10 shows the total percentage of jobs by class of worker. Not surprisingly, a vast majority of employment in both urban and rural areas is provided by the private for-profit sector. Relatively more urban dwellers are employed by non-profit organizations; relatively more self-employed individuals reside in rural areas.

What neither Figure 6 nor Table 10 reveal is that the urban counties of Maricopa and Pima employ over 80 percent of *all* of Arizona's workers, regardless of industry sector. Moreover, these two counties have higher labor force participation rates and lower unemployment rates than the balance of the state (Table 11).

All indicators suggest that Maricopa and Pima Counties will continue to account for over 80 percent of all Arizona jobs in the future (cf. Reardon, nd).

For the balance of the state, four of the 13 rural counties currently account for half of all rural employment opportunities. These counties are: Coconino, Yavapai, Yuma, and Mohave. If new job growth parallels counties' current representation in the labor force, these four counties will continue to offer over half of all rural jobs.

Table 11.

Urban-Rural Labor Force Status (Persons 16 Years and Older)

	Urban Counties (Maricopa and Pima*)	Rural Counties (Balance of State)	Arizona
Labor Force Participation Rate (percent)			
Male	72.6	62.9	72.6
Female	56.2	52.9	47.8
Unemployment Rate (percent)			
Male	7.1	10.2	7.3
Female	6.5	10.5	7.0

* Estimates based on averaging Maricopa and Pima County rates

Source: Adapted from Center for Business Research—see *Labor Force Participation Rates Vary by Sex, Race,* no date

ARIZONA PROGRAMS— SELECTED EMPLOYMENT & TRAINING OPPORTUNITIES FOR YOUTH

Section 3(a)(8) of the School-to-Work Opportunities Act of 1994 identifies "a range of promising school-to-work activities." As listed in the Act, these include tech-prep education, career academies, school-to-apprenticeship programs, cooperative education, youth apprenticeship, school-sponsored enterprises, business-education compacts, and promising strategies that assist school dropouts. These are the kinds of activities "can be developed into programs funded under the Act."

The following sections highlight key school-to-work programs/activities in Arizona. The discussion is framed in terms of: a) vocational-technological public education and b) other programs currently in-place upon which a state system of improved school-to-work opportunities could build.

PUBLIC VOCATIONAL-TECHNOLOGICAL EDUCATION (VTE)

Undeniably, Arizona youth are most widely served by the state's system of public secondary and postsecondary education. These systems are the cornerstones for reaching all Arizona students. The following sections briefly review the status of vocational-technological education, as provided through the state's public schools and community colleges.

Secondary VTE Education

All Arizona public school districts offer *some* vocationally relevant coursework. Specifically in terms of formula-funded occupational training programs, 100 districts had at least one state-approved VTE program during 1992-93. Within these districts, 172 individual schools throughout Arizona's 15 counties offered over 1,000 programs and served 95,691 students. This number rose to 98,587 during the 1993-94 school year.

Of the nearly 195,000 students served in the past two years, 51 percent were male; 49 percent were female. Additionally:

- over one-third (36.4 percent) were economically and/or academically disadvantaged;
- over one in ten (10.6 percent) were limited English proficient; and
- an average of 6 percent of the students served each year were disabled.

(Arizona Department of Education, *Annual Performance Report for Vocational Technological Education,* 1992-93; 1993-94).

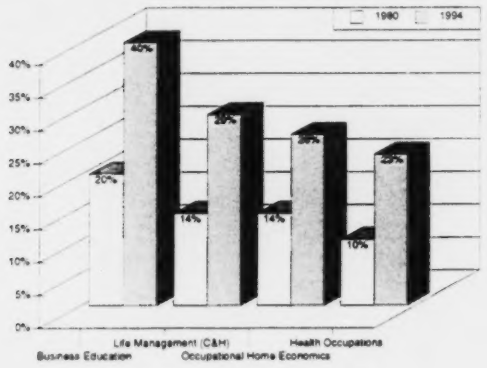
Appendix B provides additional information to illustrate the nature of secondary VTE programs, program areas, and students served.

A strength of the secondary VTE system is its emphasis on equity and non-traditional careers for both male and female participants. A recent report—*Vocational Equity in Arizona: Making a Visible Difference in Education*—discusses the state's progress in nontraditional enrollment in VTE programs (Arizona Department of Education, 1995). Excerpted from this report, Figures 7 and 8 graphically illustrate this progress.

According to ADE report, Figure 7 shows that "the percentage of males enrolled in nontraditional programs has doubled since 1980," with the greatest increase in the Business Education area. Similarly, Figure 8 shows an increasing proportion of females enrolled in nontraditional program areas, although increases in participation among females in nontraditional areas are not as dramatic as they are for males. For females, increased enrollments are noted for both agriculture and trade and industrial education.

Figure 7.

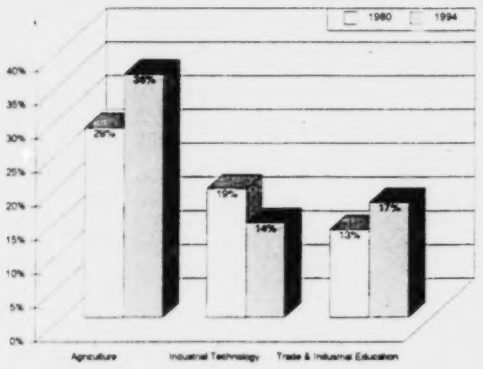
Arizona High School Males in Nontraditional Programs (1980-1994)



Source: ADE Annual Unduplicated Enrollment

Figure 8.

Arizona High School Females in Nontraditional Programs (1980-1994)



Source: ADE Annual Unduplicated Enrollment

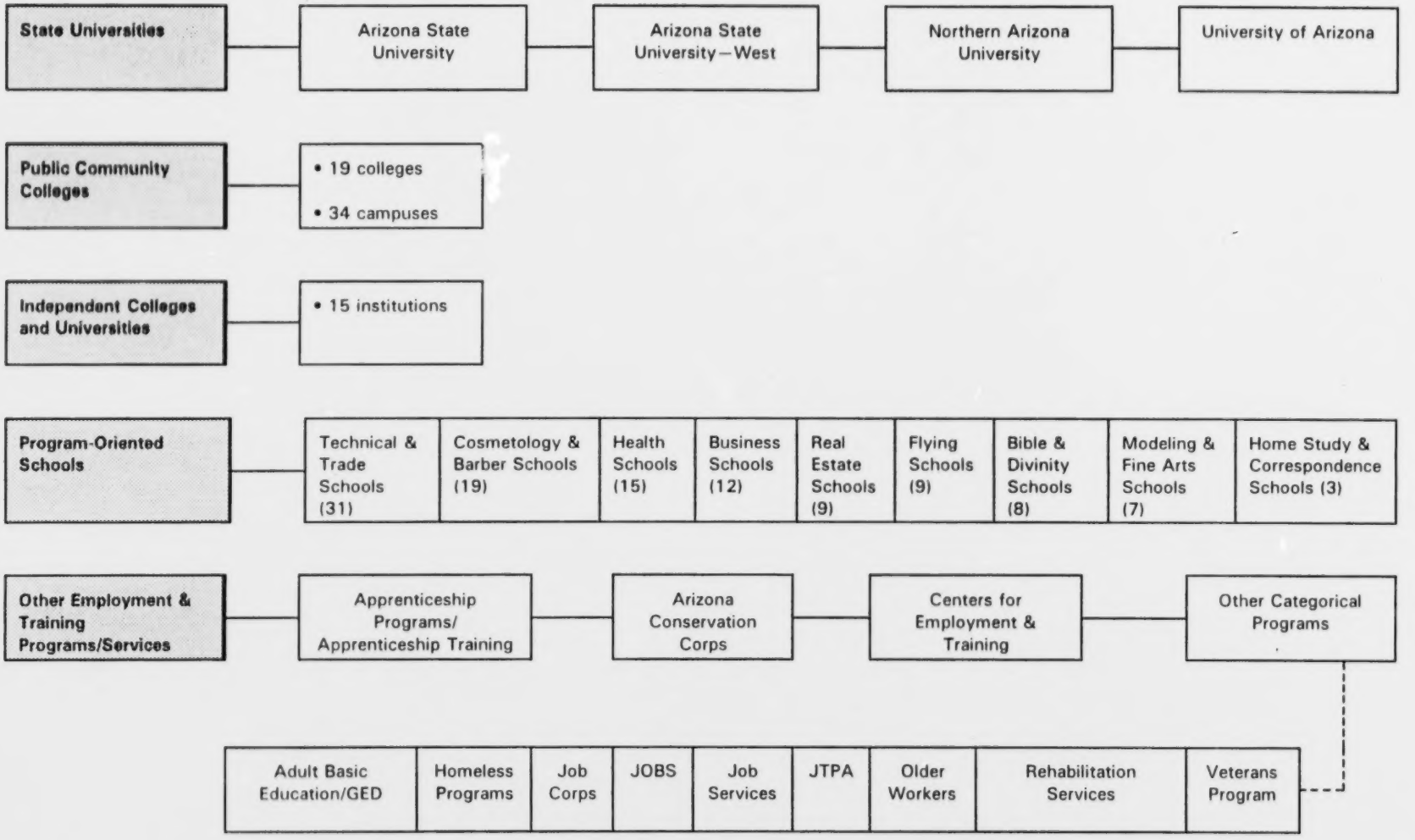
Postsecondary VTE Education

There are multiple avenues for pursuing postsecondary vocational/occupational training. Figure 9 illustrates the range of postsecondary options in Arizona.

Among these options, most vocationally-specific training is provided through the state's system of public community colleges. Nineteen colleges with 34 campuses serve students statewide. Combined, these colleges offer over 500 programs which lead to an associate degree (cf. Arizona Commission of Postsecondary Education, *Arizona College and Career Guide, 1994-95*).

Figure 9.

Postsecondary Education Sectors in Arizona



Source: Morrison Institute for Public Policy, adapting information from the *Arizona College& Career Guide*, Arizona Commission for Postsecondary Education, 1994.

In the past two years (1992-93 and 1993-94) 123,410 students were served by community college VTE programs. Of these students, 45 percent were male and 55 percent were female. Additionally:

- 15 percent were economically and/or academically disadvantaged;
- over one in ten (10.9 percent) were limited English proficient; and
- an average of 2.4 percent of the students served each year were disabled.

(Arizona Department of Education, *Annual Performance Report for Vocational Technological Education,* 1992-93; 1993-94).

Linking Secondary and Postsecondary VTE: Arizona's Comprehensive Model

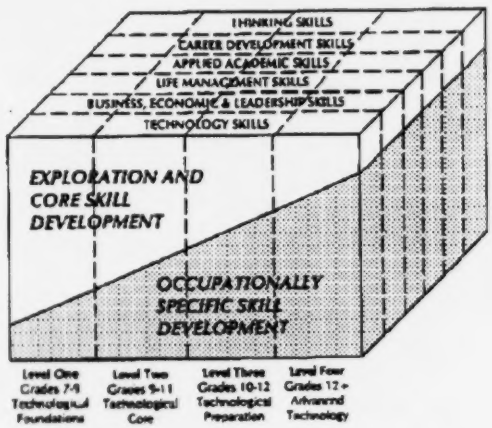
During the 1980s, talk began in earnest about the need to revitalize the training of the nation's workforce. During the same era, educational reformers placed emphasis on content and student performance standards as means to improve schools. Following these parallel movements, Arizona educators and business representatives alike began to reexamine beliefs and practices that had long shaped education in the state. New concepts for academic and vocational programming emerged.

In the area of vocational education, the state produced its VTE Comprehensive Model. Developed over a three-year period (1987-1990) by state education agency staff, representatives of business and industry, district/school personnel, and state community college and university staff, the model has three dimensions (see Figure 10).

- Skill development: The model emphasizes career exploration and core skill development in its initial stages and places greater emphasis on specific occupational training in the advanced stages.
- Levels of instruction: The model is defined by four levels of instruction which form a coherent sequence and span grades seven through postsecondary education and training (see Table 12).
- Curricular content: The model incorporates six curricular strands that the development of 1) thinking skills, 2) career development skills, 3) applied academic skills, 4) life management skills, 5) business, economic and leadership skills, and 6) technology skills.

Figure 10.

Arizona's VTE Comprehensive Model


THINKING SKILLS
CAREER DEVELOPMENT SKILLS
APPLIED ACADEMIC SKILLS
LIFE MANAGEMENT SKILLS
BUSINESS, ECONOMIC & LEADERSHIP SKILLS
TECHNOLOGY SKILLS
EXPLORATION AND CORE SKILL DEVELOPMENT
OCCUPATIONALLY SPECIFIC SKILL DEVELOPMENT
Level One Grades 7-9 Technological Foundations
Level Two Grades 9-11 Technological Core
Level Three Grades 10-12 Technological Preparation
Level Four Grades 12+ Advanced Technology

Overall, this framework for vocational technological education reflects a shift *away* from an instructional model emphasizing content in a single training area (e.g., carpentry) *to* instruction that integrates multiple skills in preparing youth for work. Fully implemented, the state's VTE Comprehensive Model provides an infrastructure for enhancing school-to-work transitions.

Table 12.

Vocational Technological Education (VTE) Model—Levels of Instruction

Level	Name and Description
I	***Technological Explorations and Foundations*** is intended to develop core skills in each of the six curricular strands and to provide occupational exploration experiences. Targets students in grades 7-9
II	***Technological Core*** is intended to enhance core skill development and to develop occupational awareness and skills in one or more "occupational clusters" as follows: —Applied Biological Systems —Business Management Technology —Human Services —Industrial Technology —Information Technology —Innovative Cluster (i.e., other) Targets students in grades 9-11
III	***Technological Preparation*** is intended to reinforce core skills and develop specific occupational competence in one program or more (e.g., horticulture; electronics) offered in the occupational areas of Agriculture, Business, Health Occupations, Marketing, Occupational Home Economics, and Trade and Industry. Targets students in grades 10-12
IV	***Advanced Technology and Retraining*** is intended to offer advanced occupational skills training. Targets postsecondary students

Source: Arizona Department of Education

Other Public Sector Programs

Under the umbrella of public secondary-postsecondary vocational education, there are several other kinds of programs which incorporate one or more of the three programmatic elements of school-to-work programs (i.e., school-based learning, work-based learning, connecting activities). Among these projects/programs are notably: Workforce Compact programs, Tech Prep programs, and Cooperative Education programs. Each of these initiatives are reviewed briefly, from the smallest to largest in terms of numbers of students served.

- **Workforce Compact**[5]

Administered by the Arizona Department of Education, School-to-Work Division, the Arizona Workforce Compact (AWC) is a school-to-work transition demonstration project designed for high school students ages 16 through 18. The AWC, which began in Fall 1992, was designed to provide students with occupational preparation experiences not available through the regular high school curriculum. Developed by a steering committee composed of representatives from secondary education, business and industry, public and private postsecondary education, and organized labor and apprenticeship systems, five alternative delivery systems were identified including:

- Apprenticeships through the Bureau of Apprenticeship Training (BAT)
- Internships in business and industry
- Youth apprenticeships
- Technical training provided by a private postsecondary institution
- Technical training provided by community colleges.

These AWC alternatives (see *AWC Compact Definitions*) were selected as "best bets" for integrating academic skills with occupational competencies while improving the transition from high school to work or advanced training.

Sites apply to become Compact members through a competitive grants process. For the 1994-95 pilot year of the AWC, 360 students are being served in eight of Arizona's 15 counties including Cochise, Coconino, Graham, Maricopa, Navajo, Pima, Pinal and Yavapai. Fourteen students are in BAT apprenticeships, 132 students are participating in youth apprenticeships, and 25 students are business/industry interns. Additionally, 12 students are receiving technical training through a private postsecondary institution, while 177 students are being trained through the community college system.

Appendix B provides additional information about Workforce Compact programs for the 1994-95 pilot year.

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5. This section is adapted from materials written and produced by the Arizona Department of Education, 1993; 1995.

AWC COMPACT DEFINITIONS

Bureau of Apprenticeship Training (BAT) Apprenticeship

A workplace experience with a formal BAT Apprenticeship agreement sanctioned by the U.S. Department of Labor. Students choosing this alternative enter into a formal indenturing process in order to attain journeyperson certification. While an indentured apprentice, the student is a paid permanent employee of a business/industry. Once journeyperson status is achieved, placement is virtually guaranteed.

Youth Apprenticeship

Programs use work-based learning methods that a) build on school learning and b) are connected to schools. The workplace experience does not have a formal BAT Apprenticeship agreement; however, a student in a youth apprenticeship receives wages for his/her work and is considered a regular employee of the business or industry.

Business and Industry Internship

The business and industry internship is an unpaid, on-the-job training experience which builds on school-based instruction in academic and technical skills.

Private Postsecondary Technical Training

This alternative provides specialized technical training at a private postsecondary school. Students enrolled in this option receive credit toward a continuing certificate or occupational degree program.

Community College Technical Education

In this alternative, the student receives specialized technical training at a community college, and credit toward a certificate or associate degree.

Source: Arizona Department of Education, School-to-Work Division

♦ Tech Prep[6]

Established by the Carl D. Perkins Vocational and Applied Technology Act of 1990, Tech Prep programs are designed to deliver instruction and develop skills via programs that span high schools and postsecondary institutions. Because of their institutional linkages, Tech Prep programs are often referred to as 2 + 2 programs (two years each of high school and community college), or 2 + 2 + 2 programs (adding two years of university/college education). Tech Prep programs are intended to result in skills certification and/or an academic degree.

Tech Prep curricula—developed at the local level—are intended to satisfy local workforce training needs as well as to address core academic requirements in communication, math, and science. Shadowing and mentoring opportunities are incorporated into Tech Prep; paid work-based experiences are options open to students on an individual basis.

Tech Prep began in Arizona during the 1991-92 school year. During its first and second years, efforts were devoted to planning, coordinating, and marketing Tech Prep programs. As a result of these efforts, there are currently 15 consortia implementing Tech Prep programs statewide (see Table 13; Appendix B).

During the first full year of implementation (1993-94), programs served 2,078 high school students and 1,959 postsecondary students (Arizona Department of Education, *Annual Performance Report for Vocational Technological Education,* 1993-94).

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6. This section is adapted from materials written and produced by the State Board of Directors for Community Colleges of Arizona, 1994.

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Table 13.

Arizona Tech Prep Consortia and Programs

CONSORTIA	TECH PREP PROGRAM(s) AREAS					
	Agriculture	Business	Health Occupations	Marketing	Occupational Home Economics	Trade & Industry Occupations
Cochise		✓	✓			✓
Coconino		✓	✓			✓
Eastern Arizona		✓		✓	✓	✓
East Valley		✓	✓	✓	✓	✓
Glendale	✓	✓	✓	✓	✓	✓
Mohave	✓	✓	✓	✓		✓
Northland		✓	✓		✓	✓
Paradise Valley		✓				✓
Phoenix		✓	✓	✓	✓	✓
Pima		✓				✓
Pinal		✓	✓	✓	✓	✓
Scottsdale		✓				✓
West Valley		✓	✓	✓		✓
Yavapai		✓	✓	✓		✓
Yuma	✓				✓	✓

Source: Morrison Institute for Public Policy, adapting information provided by the State Board of Directors for Community Colleges in Arizona, 1994

♦ Cooperative Education

Cooperative ("co-op") education programs/opportunities are offered in high schools and community colleges statewide. There are among the best known type of program designed to facilitate students' transitions from school to work.

Co-op programs provide school-based instruction while allowing students to earn credit for paid or unpaid work experience performed under supervision. Cooperative learning contracts for individual students are secured by school personnel with local employers.

In Arizona, approximately 4,000 high school students participate annually in some type of cooperative education experience (see Appendix B). Arizona's community colleges are estimated to serve between 1,500 and 2,000 students annually (Arizona Department of Education, *Annual Performance Report for Vocational Technological Education,* 1993-94).

OTHER "PROMISING PROGRAMS"

There are many other programs of various size and scope that form potential building blocks for a statewide system of school-to-work opportunities. This section does *not* inventory all employment and training programs that serve youth; rather, it highlights some key *types* of school-based and/or work-based learning opportunities that complement existing occupational preparatory programs.

Magnet School Programs

Designed originally as alternatives to forced bussing under a federal desegregation order, magnet schools offer innovative career-track curricula for high school students in the Phoenix and Tucson metropolitan areas. Magnet programs provide school-based academic and technical skill development in specific occupational areas. Although magnet schools *may* offer work-based learning opportunities for students, this element is not a routine part of the curriculum.

Magnet school programs are offered in such diverse areas as:

- Agribusiness & Equine Science
- Aerospace Education
- Communication Arts (Print, Radio, Television, Film)
- Computer Studies
- International Studies
- Law-Related Studies
- Leadership, Education, & Community Service Careers
- Marine/Environmental Sciences
- Mathematics, Science & Technology
- Medical Professions & Sports Services
- Performing Arts
- Small Business Ownership, and
- Visual Arts.

Alternative Education Programs

There are several kinds of alternative education programs designed specifically to address the needs of adolescent dropouts or those at risk of dropping out of school. Funded through a variety of sources (e.g., local dollars, federal dropout prevention funds, state 7-12 at-risk monies) and frequently supplemented by other sources (e.g., Job Training Partnership Act, or JTPA, funds), a number of alternative education programs are operating in Arizona which incorporate a vocational component.

Primarily through models such as block-scheduled "schools-within-schools" and on-campus or off-campus alternative schools, students receive individualized academic and vocational coursework and counseling services. Some programs incorporate paid or unpaid work-based learning opportunities; others support school-based enterprises. Virtually all include some form of work readiness training.

Business-Education Partnership Programs

Particularly in the last decade, numerous business-education partnership programs have been created between individual schools and businesses. Partnership efforts are funded through a variety of sources, involve various partners, and include diverse delivery systems. Although the nature of such partnerships vary, some are—in fact—geared toward delivering programs that integrate school and work-based learning and providing "connecting" activities such as career guidance and counseling, mentoring and job shadowing.

Because Phoenix and Tucson are major employment hubs, a majority of identified business-education partnerships operate within Maricopa and Pima Counties (e.g., in Maricopa County, numerous partnerships involve corporations such as Allied Signal, Intel, Motorola, and Salt River Project). While other partnerships are known to exist throughout the state as products of local need and collaboration, a definitive listing is not currently available.

Included in this category are some privately-funded partnership programs such as the *Arizona School-To-Work Partnership, Inc.* (ASWP). The ASWP is a nonprofit, tax-exempt, community-based organization which began in Arizona in 1990 as an affiliate of Jobs for America's Graduates (JAG). Founded by "a group of business leaders concerned about the quality of education, its effect on the present and future workforce, and the serious decline in the quality of life for a high percentage of Arizona's youth," the ASWP uses a JAG program model (including competency materials, training, and evaluation and research services).

High schools are recruited to participate in the program on a contractual basis. Once under contract, ASWP places certified teachers (i.e. Job Specialists) on site. These teachers become part of the hosting school's faculty, and provide services such as work readiness training, career exploration and counseling, and hands-on exposure to business/industry careers. This is accomplished through activities such as job shadowing, mentoring, and paid or unpaid employment with local employers recruited by program personnel. ASWP teachers also provide/broker services designed to place students into employment or to assist them enroll in postsecondary education/training programs.

A strength of the JAG/ASWP model is its evaluation component which includes

post-graduation follow-up studies. So, for example, between 1991 and 1994, ASWP provided service to an average of five schools annually and served over 600 students, many of whom were economically and/or educationally disadvantaged. The program has documented that, of the students served, 87 percent have graduated from high school and 92 percent are associated with positive outcomes including full and part-time employment, military service, and enrollment in some type of postsecondary education or training (Arizona School-to-Work Partnership, 1994).

Community Service Programs

As a complement or alternative to paid work-based learning opportunities, youth community service programs offer young people a chance to acquire work ethics, attitudes, and other skills through voluntary service to the community. Particularly in rural areas of low population density, where employment opportunities are limited if not non-existent, community service programs are viable alternatives for providing students with work-based learning.

Community service programs are offered through several channels including community-based volunteer centers and state-sponsored programs. Two programs in the latter category exemplify on-going activities in the state: *Learn and Serve America* programs and the Arizona Conservation Corps.

- ***Learn and Serve America*** **Programs** (formerly *Serve America*)[7]

The passage of the National and Community Service Act of 1990 and the National and Community Service Trust Act of 1993 provided financial resources to states for implementing a variety of community service programs. One type of program, known first as *Serve America* and now called *Learn and Serve America*, serves students in both elementary and high schools. Programs incorporate volunteer work in communities and a school-based learning component referred to as "service learning."

Since 1992, Arizona has received $403,000 through *Serve America* grants which has been used to support 17 projects in Maricopa, Navajo, Pima and Pinal Counties. One project (in Pima County) was/is conducted on the Yaqui Indian reservation. During 1993-94 alone, nearly 1,400 student volunteers were involved in these programs. Ranging in age from 11 to 21 years and representing both males (41 percent) and females (59 percent), over half of the students were minority. Additionally, 35 percent were economically disadvantaged; 10 percent were 18 years or older representing age-over-grade potential dropouts, out-of-school youth, and retrieved dropouts, and 5 percent (70) were teen parents.

Collectively, these 17 projects accounted for approximately 48,000 hours of community service and involved about 27,000 hours of related classroom learning. A noteworthy aspect of the classroom learning component is the development of pre-employability/ employability skills and work ethics which are then applied in practice through

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7. This section is adapted from Sandler & Vandegrift, *Students Serving Arizona*, 1994 and 1995.

community service projects (e.g., doing home repairs for the elderly; performing environmental conservation tasks).

- **Arizona Conservation Corps**[8]

Established by the Arizona Legislature in 1990, the Arizona Conservation Corps (ACC) is an Arizona State youth development agency serving young people ages 18 through 25. ACC runs year-round and seasonal programs in partnership with federal, state, tribal, and local agencies, other public agencies, and non-profit organizations. ACC provides full-time temporary employment as well as training and development opportunities for Arizona youth.

ACC recruits male and female participants representative of diverse socioeconomic and ethnic/racial backgrounds. According to ACC, the program has been successful in recruiting from populations of hard-to-serve/at-risk youth including ex-offenders, gang members, high school dropouts, teen parents, and the unemployed. As a statewide program, the ACC serves youth statewide including—visibly—Cochise, Coconino, Gila, Maricopa, Pima, Pinal, Yavapai, and Yuma Counties as well as the Gila River Indian Reservation.

The ACC conducts a significant number of community service projects with a conservation focus. Additionally, ACC services include employment readiness training, environmental and outdoor job skills training, leadership training, career counseling, assessment, guidance, GED preparation, environmental education, community college courses, and life skills training.

Youth participants are paid a stipend for their participation and become eligible to receive an education tuition voucher or cash bonus upon completing the first 2,000 hour program. Since its creation in 1990, approximately 600 young adults have been served by the Corps—about 150 each year participating in year-round programs.

GOVERNMENT-FUNDED EMPLOYMENT AND TRAINING PROGRAMS

As noted on Figure 9 and further illustrated in Figure 11, there are a number of government-funded employment and training "programs," many of which serve youth and young adults (e.g., JTPA). While government funds can be and are used to implement discrete programs, they are also often used to provide job training and related services in the context of another program (e.g., as part of an alternative school or dropout prevention program).

Appendix C provides additional information about government-funded job training and employment programs.

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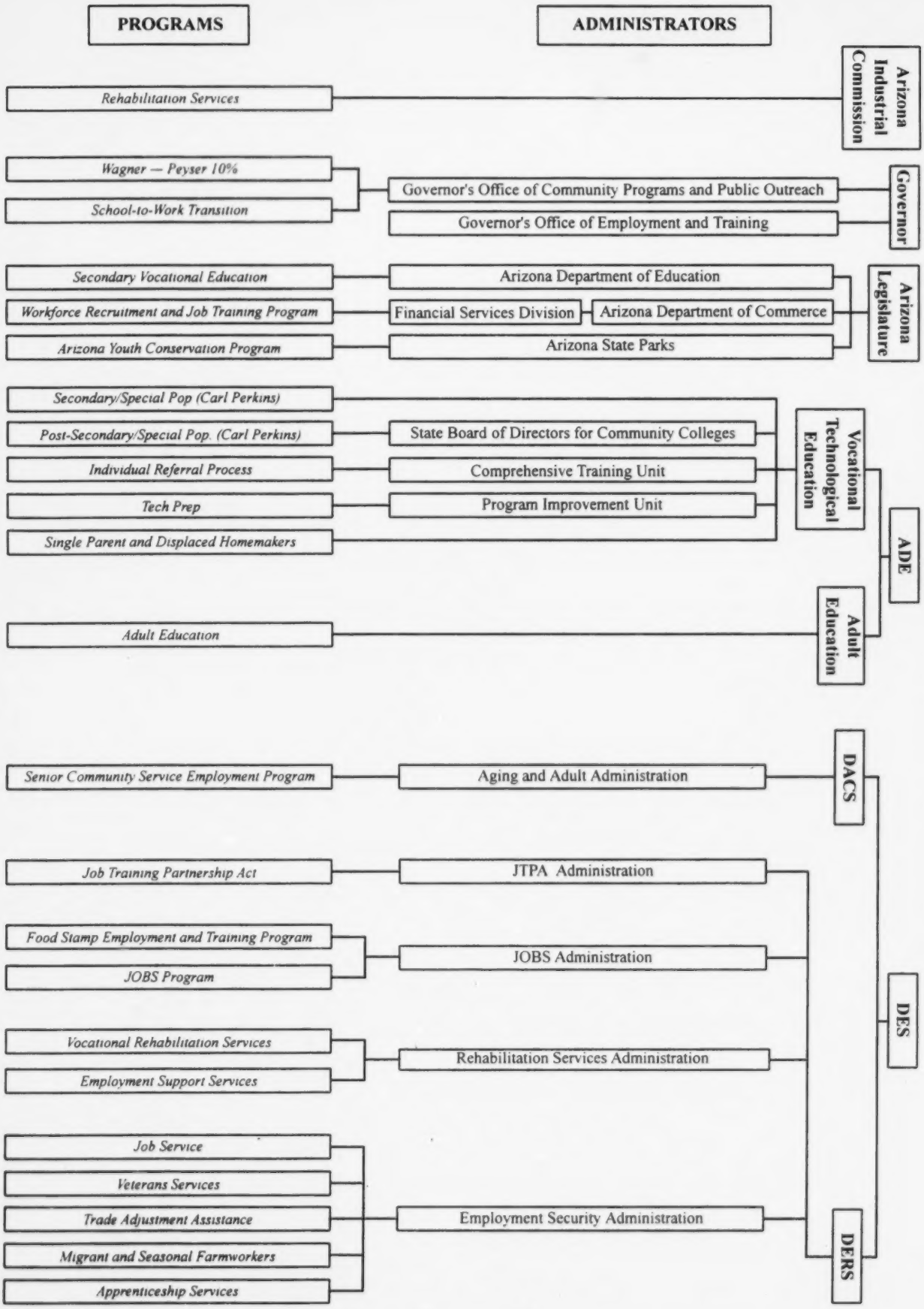
8. This section is adapted from materials originally written and produced by the Arizona Conservation Corps.

Figure 11. Employment and Training for Arizona: Funding and Administration

(What Happens When the Federal Funds Get Here ... And Where State Programs Come In)



SUPPLY, DEMAND, AND MEETING THE DEMAND: A CRITICAL DISCUSSION

SUPPLY AND DEMAND: ARIZONA'S YOUTH—ARIZONA'S JOBS

On the Edge of the 21st Century (Silvers, 1991) presents an analysis of Arizona labor market trends through the year 2000. Analysts are projecting a relative shortage of younger entry-level workers:

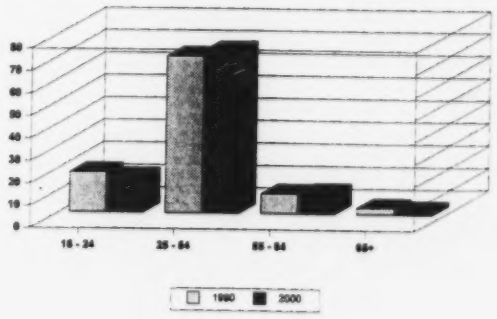
> *A particularly important source of change in Arizona's labor force [during the 1990s] stems from the end of the baby-boom period. The growth rate in the supply of workers in the entry-level group (16-24) is expected to be substantially lower than that for other age groups....A consequence of this trend is that younger workers—needed to supply Arizona's growing entry-level labor demands—should become relatively more scarce (Silvers, 1991, pp. 12-13).*

Figure 12 graphically depicts the percent share in the labor force of Arizona's younger workers in relation to other age categories.

The projected shortage of younger workers "needed to supply Arizona's growing entry-level labor demands" is seen as having several implications for the composition of the workforce by the year 2000. In particular, Department of Economic Security (DES) analysts suggest that—unable to fill the demand for entry-level workers with younger people—older workers, females, and minorities are likely to experience increased employment opportunities. However, analysts caution that it is unlikely that trends will be reversed which currently typify Arizona's minority and female workers—namely, "a disproportionate share of lower earnings, unemployment, and poverty" (ibid.).

Figure 12.

Percent Share of Arizona Labor Force by Age Group



Source: Silvers, *On the Edge of the 21st Century*, 1991

The DES findings suggests that the future bodes well for young workers insofar as they will be in demand. But does it? Before answering this question, it may be useful to highlight some of the major "supply and demand" arguments that underlie the school-to-work movement. The issues are more far-reaching and complex than treated in this report. Nevertheless, a distilled version of the national debate helps frame the forthcoming analysis of Arizona data.

The Supply—Demand Debate: Key Arguments

Behind the school-to-work movement lies concern with whether or not we as a nation are adequately preparing young people for the jobs of tomorrow. Essentially, the question is one of supply and demand: Will there be a supply of educated and trained workers necessary to meet the demands of an ever-changing job market?

Proponents of improved school-to-work transitions cite evidence to support that there will *not* be a supply of adequately educated and trained workers. Given this position, the next question becomes one of "educated and trained for what?" It is in attempting to answer this question that arguments diverge.

One argument defines the demand for more educated workers in basic educational terms. This is the perhaps the most familiar of the business-driven arguments for education reform. That is, the demand is for greater numbers of adaptable workers who possess higher levels of literacy, mathematical, and technological skills. *All* students should exit school with these skills.

Workers with higher levels of basic skills and the ability to adapt are seen as necessary because jobs—regardless of industry, occupation, or salary—are increasingly viewed as being defined and shaped by advances in technology. The following quote by the U.S. Secretary of Education illustrates this point-of-view.

> *[There is] a new set of assumptions that recognize the impact of technology and the very great need to rethink how we teach and learn, regardless of which school a child attends. And if that task isn't difficult enough, the process of education reform is becoming still more complicated by the changing demographics of our school-age population. An older generation of taxpayers who have raised their children and, to their minds, paid their dues must now be persuaded that it is the business of the nation to educate a more racially-mixed school-age population, including millions of new immigrants (Riley, 1994).*

A second argument pertaining to demand comes from analyses of data from the Bureau of Labor Statistics. Analysts note that job skill requirements have shifted considerably in the past several decades and will continue to do so commensurate with advances in technology (see Figure 13). Figure 13 shows that there has been a dramatic increase in the number of jobs requiring skilled workers—jobs which have displaced the demand for unskilled labor. The figure also shows a stable proportion of jobs requiring professional skills (i.e., those requiring a four-year college degree or more).

Skilled jobs are those that require "specific skills demanding specialized education—that is, more than a high school diploma but less than a four-year degree" (Brustein & Mahler, 1994, p. 15).

The skilled workers in question are those whom Drucker has called "technologists" and described as working with "both hands and theoretical knowledge" (e.g., medical technicians) (Drucker, 1994).

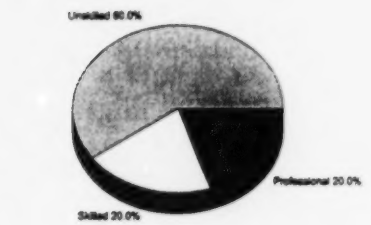
Using data such as Bureau of Labor statistics, the contention is that there will *not* be an adequate supply of skilled workers to meet the demands of the job market.

A third argument frames the demand for better educated workers in the context of the high-wage, high performance workplace. Such workplaces call for "high-skill" workers (i.e., those who possess skills of symbolic analysis defined as abstraction, system thinking, experimental inquiry, and collaboration, cf. Reich, Wirth 1993). These are the workers viewed as essential to establish and maintain the low cost/high productivity workplaces that will keep America internationally competitive.

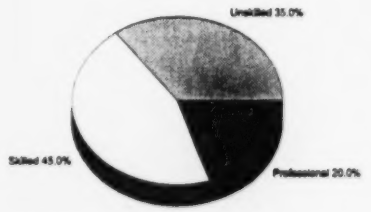
> *American corporations that can no longer generate large earning from the high-volume production of standard commodities are gradually turning toward serving the diverse special needs of customers dispersed around the globe. They are surviving by shifting from high-volume to high-value production...This global system, which is in a constant state of change and refinement, is made possible not only by evolving technology but also by... key human skills that drive high-value enterprise...the skills of symbolic analysis...For survival and success in the global market, a critical ingredient, for* individuals *and* societies, *is access to the kind of education that teaches the skills of symbolic analysis (Wirth, 1993).*

Figure 13.

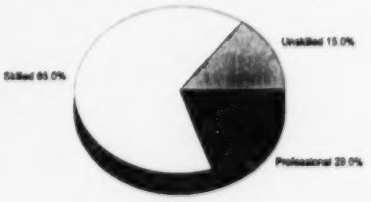
Job Skill Level Changes (1950-2000)



1950



1991



2000

Source: Bureau of Labor Statistics *in* Brustein & Mahler, 1994

However demand is defined—

> ...as a generic class of workers with greater proficiency in technological and basic skills
>
> ...as academically and technologically competent workers with specialized education
>
> ...as highly skilled workers with symbolic reasoning abilities

—proponents of school-to-work programs and systems all seem to agree that producing a supply of workers for the future is a problem. Hence, the call for education reform that encompasses better workforce preparation.

While few dispute the merits of improved educational outcomes for students, there *are* those who take exception to various aspects of the supply-demand debate. One contention—illustrated by the following citation—is that education reform *is* necessary, but is fundamentally misdirected by the economic arguments used to justify the need for reform.

> *The education reform movement has largely accepted this rhetoric about an inadequate work force and has argued for educational improvement on economic grounds. In so doing, however, they have let business off the hook and have gotten themselves hopelessly lost. They have been trying to overhaul the entire education system for business' sake, rather than focusing on their attention on the truly disadvantaged, whose abysmal education really does hinder productivity (Weisman, 1993).*

Another argument is that the job market and job skill requirements simply are not changing as dramatically as being portrayed. In short, the claim is that there is no skills shortage. Conversely, the claim is that there *is* an adequate supply of workers able to meet the demands of the job market. For example:

> *Primarily, educators and business-people must confront the evidence that there is no shortage of skilled labor...Moreover, a U.S. Labor Department study found that about one-fifth of college graduates were stuck in jobs that were not using the skills and education they attained in college, a sign not of a* skills *shortage but of a shortage of* jobs *that require skilled workers (Weisman, 1993).*

Still other analysts take exception to the notion that high performance workplaces hold the key to the country's economic future. Primarily, the argument is that although they may be worthy enterprises, they account for too small a proportion of the jobs and the gross national product to make a significant difference.

The contention is that *if* schools produce a new generation of symbolic analysts, these workers will find themselves in the classic situation of being "all dressed up with nowhere to go." The relatively few good jobs (i.e., high paying) available will generate stiff competition, with only a few highly trained people able to be accommodated. The remainder of our new generation of symbolic analysts will face job prospects that will not utilize their skills and abilities. Illustrating this vantage point—

So let's imagine the golden meteorite falls in Yosemite and the federal government uses the cosmic largess to pay for most blue-collar workers to upgrade their skills. Is there any evidence that high-skill, high-wage jobs in high performance workplaces would be available to them when they finished? No. Not unless you believe retail salesclerk is a high-skill, high-wage job (Geber, 1993).

Keeping these arguments in mind, the discussion turns to Arizona data.

Is There a Match Between Supply and Demand in Arizona?

At face value, the composition of Arizona's youth and the composition of Arizona's future job market suggest that there will be no mismatch between supply and demand. However, the match suggested is one between uneducated or undereducated workers with unskilled and semi-skilled jobs (cf. Silvers, 1991).

On the supply side, over two million Arizona youth ages 12 through 18 will be of junior/senior high school age through the year 2000. Many will grow up in poverty—nearly one of every four. Half will be males; half females. Four of every ten will be a minority. Four of every ten will be low achieving. Gifted students will account for about one in ten, as will students with disabilities.

Between 1995 and 2000, about 290,000 students should graduate from high school; 250,000 of their peers most likely will have dropped out of school. These young people are the entry-level workers of the year 2000.

The picture that emerges is that while there are Arizona young people who will undoubtedly succeed in school and life, there is a large segment of the youth population who are both academically and economically disadvantaged. While school-to-work transitions are not *explicitly* about disadvantaged populations, these *are* the students who stand at the intersection of welfare reform and workforce development.

In an era of equal opportunity, statistics paint a picture of inequality. In disproportionate numbers, poverty, minority status, and poor academic standing go hand-in-hand. Given past history, many children living in poverty appear destined to grow up and live out their lives being poor. For these children in particular, efforts to better prepare them for the world of work hold promise for helping to break the proverbial "cycle of poverty".

The composition of the disadvantaged population is critical in the school-to-work equation because of its overlap with the expected configuration of the future workforce. That is, both encompass growing numbers of women and minorities. At least to some extent, therefore, better preparing Arizona's workforce of tomorrow means better educating and training young women and minorities.

Similar to other states across the nation, Arizona must ask: Better education and training for what? As discussed, Arizona's job market of the future reflects trends similar to the nation's as a whole. Projections include declines in the relatively high-wage manufacturing sector of the economy and growth in the relatively low-wage service and trade sectors. On the demand side, then, DES analysts imply that job growth projections bode well for Arizona's unskilled and

semi-skilled labor force, many of whom are young entry-level workers.

Furthermore, there appears to be a geographic match in supply and demand. Three-fourths of Arizona's children will be from either the Phoenix or Tucson metropolitan areas, and about 80 percent of the employment opportunities of the future will be in the Phoenix or Tucson areas.

Demanding More

An anticipated match between uneducated or undereducated workers with unskilled and semi-skilled jobs can not be construed as indicating that all will be well for Arizona. Neither the education nor the business community desire to maintain a balance between low-skilled workers and low-wage jobs. Both communities are aggressively pursuing new strategies for education and economic development.

One key effort to change the course of Arizona's economic future is represented by the Governor's Strategic Partnership for Economic Development (GSPED). Acting on the Arizona Strategic Plan for Economic Development (ASPED), GSPED efforts are focusing on developing and increasing linkages among all aspects of an industry through economic clusters (e.g., Aerospace Industries, Health/Biomedical Industries).

GSPED is comprised of "cluster groups," each of which is pursuing development strategies customized to the nature of the industry in question. Notably, a development strategy that cross-cuts all cluster groups is improvement in K-12 and postsecondary education. Improved educational programming and linkages with the business community are an ongoing priority for clusters, since the development of human resources is perceived as necessary to attract and maintain high quality jobs.

Arizona faces an economic crossroads. The choice is between two divergent paths:

- *An* innovation-driven economy *that creates quality jobs by competing on the basis of value added and productivity across... economic clusters... The foundations of this economy are its quality human resources, accessible technology, capital availability, advanced physical and information infrastructure, a stable tax and regulatory environment, and a high quality of life.*

- *A* population-driven economy *that relies primarily on cost advantages to attract people and industries. The foundations of this economy are low-cost land and labor. Although jobs are created, incomes do not keep up with national trends, and quality of life is threatened.*

...The choice facing Arizona is clear: this strategy is about choosing the path to prosperity in the 21st century (SRI International et al., 1991).

In the ASPED/GSPED context, even *if* there is no mismatch between education/training and jobs in the foreseeable future, Arizona's growth is perceived as dependent upon the availability of a workforce with higher basic and advanced—general and technical—knowledge and skills.

The need for improved education and training to enhance Arizona's economic future is a theme that is reiterated in numerous reports.

- Economist Reardon in the report *Arizona Workforce 2000* states that "Education and training will be important for all groups in the labor force [since] up to 75 percent of new jobs are expected to require some college education" (no date, p. 4).

- Arizona DES analysts note that while "in the short run, Arizona and the unskilled and semi-skilled portion of its labor force are probably better off with the influx of lower-wage and part-time jobs...it would be preferable to attract a large amount of industry offering full-time and higher wage jobs. [To do this] Arizona will need a sizable and well-targeted, long-term investment in upgrading of skills and educational attainment" (DES, 1991, pp. 29).

- Researchers from the Seidman Research Institute of the College of Business at Arizona State University also emphasize the importance of education and job-training programs as a critical part of any economic development plan. They further note that "In some [Arizona] counties, a job-training program will be of limited value since so many of the residents have minimal educational attainments and sub-standard basic skills, such as reading. In these cases, enhancing the basic education of many residents will be a prerequisite to any other economic development programs" (Rex, 1994a).

MEETING THE DEMAND

There *is* a perceived need to strengthen Arizona's education system. Nevertheless, it is important to note that the state does, in fact, already have a substantial foundation on which to build a high quality, effective school-to-work system. In particular, Arizona has a far-reaching system of secondary and postsecondary vocational-technological education, as well as a conceptual model for linking these two sectors.

Moreover, through efforts such as the Arizona Workforce Compact (which notably encompasses both apprenticeship programs and *private* postsecondary providers in addition to the state's community colleges), Tech Prep, and cooperative education, students throughout the state have opportunities to be formally engaged in workplace training in addition to school-based learning. Tech Prep programs in particular, with their emphasis on meeting the training needs of local economies, holds special promise for building a school-to-work system.

As identified in this report, there are numerous other programs that form the "building blocks" of a state system of school-to-work opportunities. These include magnet school programs, alternative education programs, business-education partnership programs, and community service programs. Moreover, as in other states, Arizona has a myriad

of government-funded employment and training programs, many of which serve youth.

What's missing? In reviewing the programs included in this report, and in interviewing people in the state affiliated with these programs, one of the main problems in "meeting the demand" is that most programs do not routinely integrate the components identified in the School-to-Work Opportunities Act of 1994, i.e., school-based learning, work-based learning, and connecting activities. Most school-based programs are just that: school-based. While students may be afforded an opportunity to engage in work (paid or unpaid), there appears to be considerable variation in the degree to which the work experience is directly linked with the student's school-based learning.

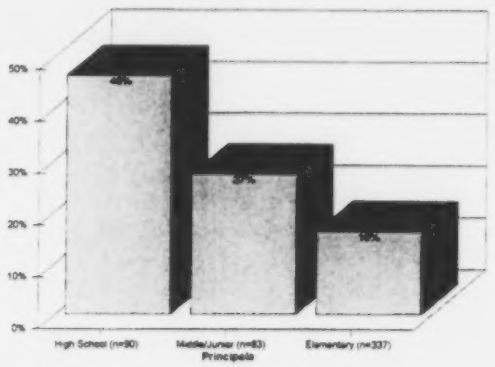
Is there evidence to support the need to improve workforce preparatory programming? To improve the linkages between schools and employers? To better meet the demand for skilled labor? ***Yes.***

For example, Arizona principals throughout the state were surveyed during the spring of 1994 regarding a number of issues related to the delivery of comprehensive services, including school-to-work programs. Over 500 principals responded (representing half of *all* principals in the state, representative of schools by type, size, and geographic location).

Of the total number of respondents, 173 were principals of either middle/junior high schools or high schools. Over one-third of these principals (35.5 percent) rated improved school-to-work programs as a high priority. Among high school principals *only*, nearly half (45.6 percent) indicated said this was a high priority (see Figure 14). The highest ranking of need came from middle/junior high school principals and high school principals from two geographic areas—Native American reservations and inner cities. Notably, these areas are most affected by poverty and its correlates (e.g., high unemployment; low per capita income) (Vandegrift, 1994).

Figure 14.

Are Improved School-to-Work Programs A Priority? — Arizona Principals Respond



Percentage of Arizona principals rating school-to-work transition programs as a **high** priority

Source: Morrison Institute for Public Policy

Regarding employers' perceptions of the need to improve workforce preparation programs, numerous national studies highlight employers' concerns (cf. Applebome, 1995; Nickell, 1994; Siegel & Sorensen, 1994). By comparison, quantified data specific to Arizona are limited. However, there is some "hard" evidence which suggests a need to improve school-employer linkages.

For example, one study of rural employers in Arizona found that employers specifically wanted more entry-level workers with appropriate workplace attitudes and ethics (Danzig, 1992). Another employer survey, conducted by the Arizona Department of Education, provides a mixed message.

The department surveyed nearly 1,000 employers of high school VTE "program completers" 18 months after the students' graduation. Results were calculated for 290 respondents.

The "good news" from this survey of is that:

- 59 percent of the students involved in this follow-up survey were still employed either full or part-time fully 18 months after graduation from high school.
- Moreover, students' academic, technical, and employability skills met or exceeded employers' expectations.

The "bad news" from the survey is that:

- Most employers (65 percent) were *unaware* that the students in question had completed a VTE preparatory program in high school; no documentation of skill attainment was provided to the employer by either the student or his/her high school in 85 percent of the cases.
- VTE program participation was *not* part of the decision to hire in a majority of cases (72 percent).
- High schools/vocational centers were *not* involved in placing the student in a majority of cases (80 percent).
- A student's VTE preparation was considered *unrelated* to his/her current job by 57 percent of the surveyed employers.

(Arizona Department of Education, *Vocational Technological Education Report 1993-94.*)

CHALLENGES FOR CREATING A SCHOOL-TO-WORK OPPORTUNITIES SYSTEM

Data suggest a match between Arizona's future labor supply and job market of the future. However, Arizona, like so many other states, faces a crossroads in terms of economic development. Most economists—and educators—agree that the state cannot afford to predicate its future on past trends. A change of course is essential, and a key part of plotting a new direction is to upgrade the skill levels of Arizona's labor force and to increase linkages between schools and employers.

In accomplishing these goals, Arizona needs to be especially cognizant of the educational challenges presented by its disadvantaged population, as many future workers fall into this category. Moreover, Arizona's rural-urban dichotomy *does* pose a unique challenge for educators and businesses alike.

Clearly, urban areas—with their high population densities and employment opportunities—hold the most promise for reaching a majority of students. And yet, if statewide efforts to improve school-to-work transitions are to encompass *all* of Arizona's students, strategies (such as Tech Prep) must be pursued to serve young people in the more isolated rural areas of the state.

In comparison with urban areas, rural areas are characterized by lower

population densities, higher percentages of minorities, higher percentages of undereducated adults, higher rates of unemployment, and lower per capita incomes. In contrast, urban areas are characterized by higher population densities, lower overall percentages of minorities (but faster-growing minority populations), lower percentages of undereducated adults, lower rates of unemployment, and higher per capita incomes. Given the unique pattern of rural educational and economic need, these students—perhaps even more so than their urban peers—could prosper from improved school-to-work transitions.

Overlaid on the urban-rural dichotomy, another challenge rests upon balancing the state's vision for economic development with economic realities. Alternatively phrased, planners need to be realistic about the diverse nature of supply and demand in various sectors and regions of the state. Not *all* jobs can ever be the kind of high-wage, high-performance opportunities that would propel Arizona into economic prosperity.

A case can be made that how one defines jobs, and "quality jobs," is relative. For example, a service sector job—typically associated with low wages—that provides income and good benefits can be a step-up for someone who has been previously unemployed, or a decent entry-level position for a young inexperienced worker. In this sense, "quality jobs are jobs that are appropriate to the labor force requirements of a given area" (Coopers & Lybrand, 1991).

The point here is *not* to pit high-wage industries against all others in pursuit of economic goals, but to recognize that multiple economic development strategies are necessary and will vary by industry and region. This point is illustrated in a recent study conducted by the Seidman Research Institute, College of Business, Arizona State University. Author Tom Rex examines economic indicators (e.g., employment and unemployment statistics, average wage, per capita income, industrial mix) for all 15 Arizona counties. The analysis attests to diverse needs by county, specifically in relation to three economic development strategies: job training, job creation, and the development of high-quality jobs.

In some counties, job training and education are prerequisites for other types of economic development activities. In other counties, more jobs are needed than are available in relation to the supply of labor. Lastly, where existing job creation is "more than adequate...creation of high-quality jobs should be the goal" (Rex, 1994). By highlighting the varying economic conditions across Arizona, the study effectively illustrates the need to adopt multiple economic development strategies in pursuit of economic goals. (See Appendix D for excerpts from Rex's study on a county-by-county basis.)

Finally, in pursuing economic goals, the challenge is to improve linkages between schools, workplaces, and local/regional economic development efforts. Arizona has the necessary "building blocks" to provide appropriate employment and training programs for its youth. The problem is that these programs are, as critics claim, fragmented and not as strongly linked as they might be with workplaces and economic realities. They are *not* a system.

♦ ♦ ♦

The challenges are daunting—the opportunities are great. For even though the status quo may not call for improving the school-to-work transition, Arizonans do. The state's education and economic development agendas converge on improving the educational options and outcomes for *all* students toward the ultimate goal of increasing the state's standard of living and quality of life. Improved educational programming, regional economic development efforts, and greater linkages between the two are keys for Arizona's youth...Arizona's future.

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APPENDIX A: STUDENTS WITH DISABILITIES (By type of disability)

	Age Distribution				
Disability[a]	3-5	6-11	12-18	19-21	TOTALS[b]
Mental Retardation	N/A	2,163	2,527	468	5,158
Hearing Impairments	N/A	389	331	14	734
Speech or Language Impairments	N/A	10,465	852	5	11,322
Visual Impairments	N/A	141	125	5	271
Serious Emotional Disturbance	N/A	1,261	2,157	46	3,464
Orthopedic Impairments	N/A	359	241	47	647
Other Health Impairments	N/A	129	121	3	253
Specific Learning Disabilities	N/A	15,700	18,328	506	34,534
Multiple Disabilities	N/A	538	458	94	1,090
Autism	N/A	112	71	16	199
Traumatic Brain Injury	N/A	7	9	0	16
TOTALS	5,941	31,264	25,220	1,204	63629

b) Does not include deaf-blindness.

b) Data reflect figures compiled in December 1992 for the 1992-93 schools year; the total of 63,629 reported in this table differs slightly from the total of 66,009 reported in the text. This is attributed to differences in mid-year and end-of-year reports.

Source: Arizona Department of Education, Special Education Section

APPENDIX B: ADDITIONAL INFORMATION— PUBLIC SECTOR VTE PROGRAMS

Table B-1.

Secondary VTE Programs by Occupational Area: Students Served and State-Approved Programs (FY 1992-93)

Occupational Area	# Students (Total Enrollment)	Program Areas	# State-Approved Programs
Agriculture Education	3,453	Agriculture Business/Management	64
		Agriculture Mechanic	7
		Horticulture	8
		Renewable Natural Resources	5
		Total Agriculture	***84***
Business Education	41,905	Accounting/Computing Occupations	81
		Administrative Support Cler/Sec	147
		Business DP Occupations	26
		Total Business	***254***
Consumer/ Homemaking	14,361	N/A	—
Health Occupations Education	1,355	Health Assisting	21
		Nursing Assistant	16
		Practical Nurse	1
		Total Health Occupations	***38***
Industrial Education	15,172	N/A	—
Marketing Education	4,844	Entrepreneurship	72
		General Marketing	54
		Financial Services Marketing	1
		Floristry Marketing	1
		Food Marketing	1
		Hospitality Marketing	7
		Total Marketing	***136***
Occupational Home Economics Education	4,390	Child Care and Guidance	48
		Clothing, Apparel & Textiles	41
		Food Production Management/Service	65
		Home Furnishings & Equipment Mgt	19
		Institutional Home Management & SS	19
		Total Home Economics	***192***

Table B-1. *—continued*

Occupational Area	# Students (Total enrollment)	Program Areas	# State-Approved Programs
Trade and Industry Education	10,211	Aircraft Mechanic	2
		Auto Body Repair	14
		Auto Mechanics	84
		Building Maintenance	9
		Building Trades	46
		Cabinetmaking	19
		Carpentry	22
		Comm/Electronics	9
		Commercial Art	12
		Commercial Photography	17
		Computer Electronics	7
		Construction Equipment Operator	2
		Cosmetology	19
		Culinary Arts	8
		Diesel Mechanics	2
		Drafting	41
		Electrical Equipment Repair	6
		Electrical Trades	6
		Fire Fighting/Prevention	4
		Furniture Making	2
		Graphic Arts	16
		Heating, Air Conditioning & Refrigeration	3
		Industrial Electronics	1
		Jewelry Design, Fabrication & Repair	2
		Law Enforcement	2
		Machine Shop	17
		Marine Maintenance	1
		Masonry	2
		Plumbing	3
		Radio TV Production	12
		Sheet Metal	2
		Small Engine Repair	2
		Tech Theater Design	2
		Truck & Bus Driving	1
		Upholstering	2
		Welding	34
		Total Trade and Industry	***433***
8 Areas	**95,691 Students Enrolled**	**57 Specific Program Areas**	**1,137 State-Approved Programs**

Source: Arizona Department of Education

Table B-2.

1994-95 Arizona Workforce Compact Contractors, Programs, and Students Served

SCHOOL DISTRICT (Contractor)	County	TYPE OF PROGRAM (Number of students served) 1 = BAT Apprenticeships 2 = Youth Apprenticeships/Summer Apprenticeships 3 = Business/Industry Internships 4 = *Private* Postsecondary Technical Training 5 = Community College Technical Education					Total # Students Served
		1	2	3	4	5	
Arizona Western College	Yuma					53	53
Benson UHSD	Cochise		5				5
Buena High School	Cochise					11	11
Casa Grande UHSD	Pinal	2					2
Cochise College	Cochise					83	83
Deer Valley USD	Maricopa				2		2
Dysart USD	Maricopa	3		7		5	15
East Valley Institute of Technology	Maricopa	2	50				52
Maricopa Co. Regional School District	Maricopa					5	5
Maricopa USD	Pinal		2				2
Mingus UHSD	Yavapai		5				5
Page USD	Coconino		1				1
Paradise Valley USD	Maricopa	4	4				8
Phoenix USD	Maricopa		50				50
Santa Cruz Valley UHSD	Pinal		5				5
Sunnyside USD	Pima			18			18
Tucson USD	Pima	2			10	20	32
Whiteriver USD	Navajo	1	10				11
TOTALS		14	132	25	12	177	360

Source: Arizona Department of Education, School-to-Work Division, 1995

Table B-3.

1994-95 Tech Prep Consortia Members and Programs

CONSORTIA NAME	Community College(s)	High School District(s)	Programs Offered
Cochise Consortia	Cochise CC	Benson Douglas Sierra Vista Tombstone Valley Union Willcox	Avionics/Aviation Business Fire Science Health Public Service
Coconino Consortia	Coconino County CC	Flagstaff Grand Canyon Greyhills Page Tuba City Williams	Construction Trades Electronics Technology Health Hotel/Restaurant Mgt
Eastern Arizona Consortia	Eastern Arizona College: Thatcher & Gila Pueblo	Duncan Fort Thomas Globe Hayden-Winkelman Miami Payson Pima Safford San Carlos Thatcher Young	Advertising Design Automotive Technology Child Development Drafting Machine Welding Office Technology Small Business Mgt
East Valley Consortia	Chandler/Gilbert CC GateWay CC Mesa CC Rio Salado CC Scottsdale CC	Apache Junction Chandler EVIT Gilbert Mesa Queen Creek Tempe	Accounting Administrative Support Aircraft Maintenance Allied Health Culinary Arts Electronics Marketing
Glendale Consortia	Glendale CC	Deer Valley Glendale Peoria	Administrative Support Accounting Agriculture/ Biotechnology Automotive Child Care Drafting Electronics Health Occupations Marketing Nursing Assistant

Table B-3. — *continued*

CONSORTIA NAME	Community College(s)	High School District(s)	Programs Offered
Mohave Consortia	Mohave CC	Colorado City Colorado River Fredonia/Moccasin Lake Havasu Mohave Union	Administrative Support Agriculture Building Trades Business Computer Information Health Sciences Hospitality
Northland Consortia	Northland Pioneer College	Blue Ridge Chinle Ganado Heber Holbrook Joseph City Kayenta Red Mesa Rough Rock Community Schools Round Valley Show Low Snowflake Whiteriver Winslow	Accounting Administrative Support Business Computer Information Systems Construction Technology Drafting Early Childhood Development Health Occupations
Paradise Valley Consortia	Paradise Valley CC	Paradise Valley	Accounting Computer Information Systems Engineering/CAD Environmental Hazardous Materials Technology Total Quality Mgt
Phoenix Consortia	Phoenix CC	Phoenix Union	Business Drafting Fashion Technology Fire Science Health Occupations Hospitality Interior Design Printing/Graphics Technology

Table B-3. — *continued*

CONSORTIA NAME	Community College(s)	High School District(s)	Programs Offered
Pima Consortia	Pima CC	Amphitheater Catalina Foothills Flowing Wells Indian Oasis-Baboguivari Mammoth/San Manuel Marana Nogales Pima Co. Schools Sahuarita Sunnyside Tucson	Administrative Support Advanced Technology Automotive Technology
Pinal Consortia	Central Arizona College	Apache Junction Casa Grande Union Coolidge Florence Gila Bend Hayden-Winkelman Maricopa Queen Creek Ray San Manuel Santa Cruz Valley Superior	Child Care Guidance Health Occupations Hospitality Manufacturing/Engineering Technology Office Administrative Support
Scottsdale Consortia	Scottsdale CC	Scottsdale Unified	Environmental Design Drafting Personal Computers Motion Picture/TV Production
West Valley Consortia	Estrella Mountain CC	Agua Fria Buckeye Dysart Tolleson Trevor Browne (PUHSD)	Administrative of Justice Administrative Support Business & Personal Computers General Business Health Marketing/Hospitality

Table B-3. — *continued*

CONSORTIA NAME	Community College(s)	High School District(s)	Programs Offered
Yavapai Consortia	Yavapai CC	Bagdad Bradshaw Mountain Camp Verde Chino Valley Humboldt Mingus Prescott	CAD Construction Health Science Hospitality Office Administration Paralegal
Yuma Consortia	Arizona Western College	Yuma Union	Agriculture Business Agriculture/ Biotechnology Culinary Arts Early Childhood Education Environmental Technology

Source: State Board of Directors for Community Colleges of Arizona, 1994

Table B-4.

High School Cooperative Education Sites by County

COUNTY	DISTRICT	HIGH SCHOOL
Apache	Chinle Unified #24	Chinle HS
	St. Johns Unified #1	St. Johns HS
Cochise	Douglas Unified #27	Douglas HS
	Sierra Vista Unified #68	Buena HS
Coconino	Flagstaff Unified #1	Coconino HS Flagstaff HS Sinagua HS
	Tuba City Unified # 15	Tuba City
Gila	Globe Unified #1	Globe HS
	Payson HS	Payson Unified #10
Graham	None	
Greenlee	None	
Lapaz	None	
Maricopa	Agua Fria UHSD #216	Agua Fria UHS
	Deer Valley Unified #97	VoTech Center
	Chandler Unified #80	Chandler HS
	Gilbert Unified #41	Gilbert HS
	Glendale UHSD #205	Apollo HS Cortez HS Glendale HS Greenway HS Independence HS Moon Valley HS Sunnyslope HS Thunderbird HS Washington HS
	Mesa Unified #4	Dobson HS Mesa HS Mountain View HS Red Mountain HS Westwood HS
	Paradise Valley Unified #69	Horizon HS Paradise Valley HS Polaris HS Shadow Mountain HS

Table B-4. — *continued*

COUNTY	DISTRICT	SCHOOL(S)
Maricopa-*continued*	Peoria Unified #11	Cactus HS Ironwood HS Peoria HS
	Phoenix UHSD #210	Alhambra HS Camelback HS Carl Hayden HS Central HS Maryvale HS MetroTech North HS South Mountain HS Traditional Trevor Brown HS
	Queen Creek Unified #95	Queen Creek HS
	Scottsdale Unified #48	Arcadia HS Chaparral HS Coronado HS Saguaro HS
	Tempe UHSD #213	Corona Del Sol HS Marcos De Niza HS McClintock HS Tempe HS
	Tolleson UHSD #214	Tolleson HS Westview HS
Mohave	Colorado City Unified #14	Colorado HS
	Colorado River UHSD #2	Mohave HS River Valley HS
	Mohave UHSD #30	Kingman HS
	Lake Havasu Unified #1	Lake Havasu HS
Navajo	Show Low Unified #10	Show Low HS
Pima	Amphitheater Unified #10	Amphitheater HS Canyon Del Oro HS
	Flowing Wells Unified #8	Flowing Wells HS
	Indian Oasis-Baboquivari Unified #40	Baboquivari HS
	Marana Unified #6	Marana HS Mountain View HS
	Sahaurita Unified #30	Sahaurita HS
	Sunnyside Unified #12	Desert View HS Sunnyside HS

Table B-4. — *continued*

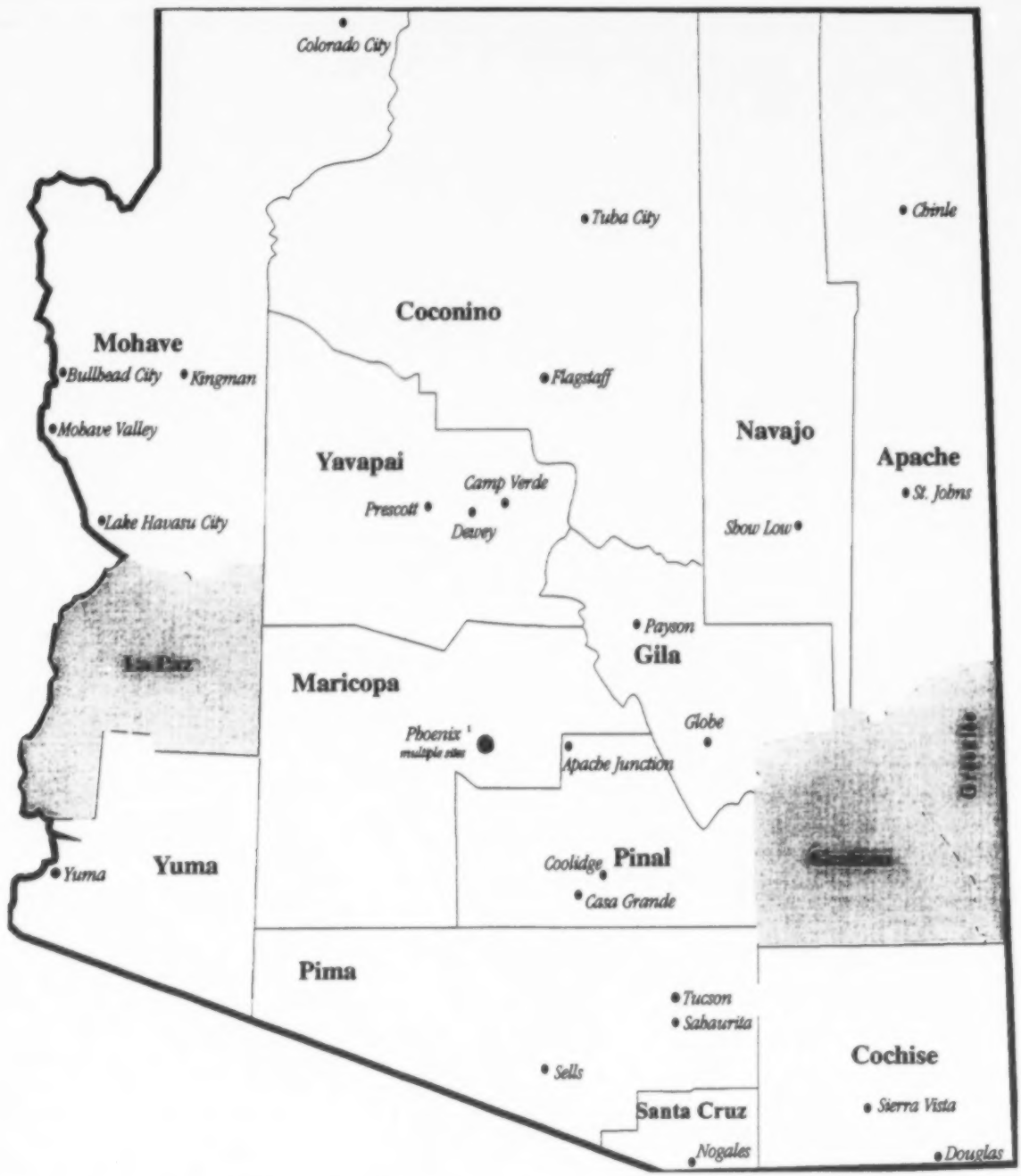
COUNTY	DISTRICT	SCHOOL(S)
Pima—*continued*	Tucson Unified #10	Catalina HS Cholla HS Palo Verde HS Pueblo HS Rincon HS Sabino HS Sahuaro HS Santa Rita HS Tucson Magnet HS University HS
Pinal	Apache Junction Unified #43	Apache Junction HS
	Casa Grande UHSD #82	Casa Grande UHS
	Coolidge Unified #21	Coolidge HS
Santa Cruz	Nogales Unified #1	Nogales HS
Yavapai	Camp Verde Unified #28	Camp Verde HS
	Humboldt Unified #22	Bradshaw Mountain HS
	Prescott Unified #1	Prescott HS
Yuma	Yuma UHSD #70	Cibola HS Kofa HS Yuma HS

Source: Arizona Department Of Education

Figure B-1 on the following page illustrates the geographic outreach of high school co-op.

Figure B-1.

Arizona High School Cooperative Education Sites



● = High School Co-op Sites ([1] = multiple sites in the Phoenix metropolitan area)

▒ = Counties without formal co-op programs or courses (Grades 7-12)

APPENDIX C: ARIZONA EMPLOYMENT PROGRAM SUMMARY

[Note: This appendix reproduces in its entirety the report *Arizona Employment Program Summary: 1994 Update*, which was prepared by the Morrison Institute for Public Policy, School of Public Affairs, Arizona State University, in September 1994. The report was prepared for the Governor's Office of Employment and Training in September 1994 (funded in part by 8 percent funds from JTPA, Section 123, per agreement with the Arizona Department of Education). The report is authored by Ryan Johnson, Pam Eck, and Nancy Welch.]

ARIZONA EMPLOYMENT PROGRAM SUMMARY 1994 Update

One year ago, in the process of assisting the Implementation Task Force for the Governor's Office of Employment and Training, Morrison Institute for Public Policy surveyed the major government-funded employment and training programs operating in the state. The survey collected information on target groups, funding, number served, and services. The findings were presented in several summary tables. The purpose of the research was to provide Task Force members with an overview of employment and training in the state.

In August 1994, a similar survey was conducted to update the 1993 findings. As before, emphasis was placed on programs that receive state funds or federal funds through the state. Programs that obtain funds through direct national mechanisms should be considered in another survey. This document summarizes the results of the 1994 survey. Although the most prominent programs are presented in the tables, there may be some programs that have been inadvertently omitted. The tables will be revised as new information becomes available.

Summary of Information

As evidenced by the tables in Appendix A, the picture of government-funding employment training in Arizona is anything but simple. Program services and jurisdictions, eligibility criteria, target populations, and funding streams remain complicated.

The 1994 survey revealed that at least 20 major state and federal-funded job training programs operate in Arizona, under the administrative authority of four federal and at least six state agencies or departments. When added together, these 20 programs operating in Arizona spend more than $149 million annually on employment and training programs and administration.

Funding Changes for 1994

As in 1993, the two largest programs in Arizona in 1994 by funding amount are the Job Training Partnership Act (JTPA) and Vocational Rehabilitation Services, both administered by the Arizona Department of Economic Security (DES). Although the survey revealed a drop in funding for JTPA—down to roughly $41 million from $44 million in 1993—funding for Vocational Rehabilitation Services increased by nearly 40 percent, from

$27.4 million in 1993 to more than $38.2 million in 1994.

Other programs receiving significant funding increases in 1994 were: the Job Opportunity and Basic Skills (JOBS) program, which increased from $9.3 million to more than $15 million; Job Service (Wagner-Peyser Act) which rose more than 12 percent to $9.9 million; and, Adult Education which increased from $5.5 million in 1993 to $7.9 million in 1994. Federal funding for Carl Perkins Vocational and Applied Technology Education Act programs went up slightly, from $14.3 to $14.6 million in 1994. New to the survey this year was funding for School-to-Work Transition. Although the state's plan is still being developed, more than $250,000 in federal funds was received to support planning activities which would result in the development of a comprehensive school-to-work system.

Although the changes in Arizona's job training structure between 1993 and 1994 seem minor, federal and state initiatives could bring significant changes in 1995.

Common Acronyms

The tables include numerous abbreviations for programs and agencies. The following list provides a key to some of the abbreviations. Other acronyms are defined on the tables.

ADE-	Arizona Department of Education
DACS-	Division of Aging and Community Services, Arizona Department of Economic Security
DERS-	Division of Employment and Rehabilitation Services, Arizona Department of Economic Security
DES-	Arizona Department of Economic Security
USDA-	United States Department of Agriculture
USDOE-	United States Department of Education
USDOL-	United States Department of Labor
USHHS-	United States Department of Health and Human Services

Categorization of Services

Regardless of their funding source and purpose, employment and training programs generally provide similar services. However, each program often uses a unique jargon to describe their services and delivery mechanisms. Morrison Institute chose to use the same five service categories as the U.S. General Accounting Office did in its 1994 report ***Multiple Employment Training Programs.*** For example, the category "counseling and assessment" includes a range of services that are related to determining what type of employment a person is best suited for, what skills they possess, and what services they need. "Remedial education" refers to education assistance that will help a person obtain a general equivalency diploma (GED) or improve their basic skills or English skills. "Vocational skill training" encompasses all types of occupational training. The term "placement assistance" includes all the activities that assist people in obtaining employment. "Support services" are those types of assistance

that help people overcome obstacles to employment. Social services, child care, work-related tools or licenses, and rehabilitation devices come under support services.

Funding Sources

Programs described in the following tables receive federal funds, state funds, a combination of both, or a combination which is supplemented by fees, donations, or other types of monies. Sources of the funds are detailed on the tables.

The amount of funding is often based on a formula. For example, monies may be awarded on the number of economically disadvantaged people in the state's population or the proportion of unemployed residents or a combination of a number of factors. Formulas differ substantially from one program to another.

Summary of Public Sector Workforce Development and Training Programs in Arizona

(ranked by amount of funding)

Program	Federal Source	State Agency / Administrative Subunit	Target Population(s)	Current Year Funding
Job Training Partnership Act	USDOL	DES / DERS / JTPA Admin.	economically disadvantaged; AFDC recipients; dislocated workers; dropouts; older workers	$41,108,571[b]
Vocational Rehabilitation Services	USDOE	DES / DERS / Rehabilitation Services Admin.	individuals with disabilities	$38,265,631[c]
Job Opportunities and Basic Skills (JOBS) Program	USHHS	DES / DERS / JOBS Admin.	AFDC recipients	$15,396,600[c]
Carl D. Perkins Vocational and Applied Technology Education	USDOE	ADE / Division of Vocational and Technological Education / State Board of Directors of Community Colleges	secondary and post-secondary vocational education students	$14,630,200[b]
Job Service	USDOL	DES / DERS / Employment Security Admin.	job seekers or individuals who can work legally in the U.S.	$9,961,111[b]
Adult Education	USDOE	ADE / Division of Adult Education	persons out of school and over 16 without a high school diploma, AFDC recipients	$7,998,302[b]
Workforce Recruitment and Job Training Program	n.a. (AZ)	Arizona Department of Commerce / Financial Services Division	businesses coming to or expanding in Arizona, GSPED cluster industries, small businesses (including rural)	$3,000,000[a] (funding is for '93-'95)
Vocational Education Assistance	n.a. (AZ)	ADE / Division of Vocational Technological Education	high school vocational education students	$2,835,000[a]
Senior Community Service Employment Program	USDOL	DES / DACS / Aging and Adult Admin.	workers over 55	$2,670,700[b]
Individual Referral Process	USDOL USHHS USDOE	ADE/ Division of Vocational and Technological Education / Comprehensive Training Unit	dislocated workers, JTPA participants, Perkins participants, JOBS participants	$2,585,944[c]
Employment Support Services	USHHS	DES / DERS / Rehabilitation Services Admin.	individuals with severe disabilities	$2,264,667[c]
Veterans Services	USDOL	DES / DERS / Employment Security Admin.	veterans	$2,048,000[b]
Trade Adjustment Assistance	USDOL	DES / DERS / Employment Security Admin.	workers unemployed due to foreign competition	$2,012,500[b]

[a] state funds
[b] federal funds
[c] combination of state and federal funds

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Program	Federal Source	State Agency / Administrative Subunit	Target Population(s)	Current Year Funding
Vocational and Technological Education Model Programs	n.a. (AZ)	ADE / Division of Vocational and Technological Education	public school students in grades 7-12	$2,000,000[a]
Food Stamp Employment and Training Program	USDA	DES / DERS / JOBS Admin.	food stamp recipients	$1,924,000[d]
Wagner-Peyser Governor's 10% Discretionary Fund	USDOL	DES / Governor's Office of Community Programs	people experiencing special barriers to employment; economically disadvantaged	$983,000[a]
Migrant and Seasonal Farmworkers	USDOL	DES / DERS / Employment Security Admin.	job seekers who can work legally in the U.S.	$255,000[b]
School-to-Work Transition	USDOE USDOL (joint funding and admin.)	Governor's Office of Community Programs	high school students; students re-entering high school or seeking GED completion	$250,000[b] (planning grant funds only)
Apprenticeship Services	USDOL	DES / DERS / Employment Security Admin.	job seekers or individuals who can work legally in the U.S.	$116,500[a]
Vocational Rehabilitation	n.a. (AZ)	Industrial Commission of Arizona	workers injured on the job	not available
AZ Youth Conservation Program	USDOL	AZ State Parks / AZ Youth Conservation Program	Arizona residents aged 14-25	not available

[a] state funds
[b] federal funds
[c] combination of state and federal funds

Arizona Department of Economic Security (DES) Workforce Development Programs

Program	State Administrator	Target Population(s) and # Served	Eligibility	Services[1]	Service Providers	Funding Based on	Authorization and Current Year Funding Amount
Job Training Partnership Act (JTPA)	DERS JTPA Admin.	16,734 economically disadvantaged youths and adults, AFDC recipients, drop-outs, dislocated workers, older workers in PY[2] 1993	economically disadvantaged must meet poverty or LLSIL levels; dislocated must be UI eligible	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	varies by local service delivery area; generally local staff, subcontractors	federal formula	• JTPA: $41,108,571

[1] "Services" can be defined in various ways. The following terms were used by the U.S. General Accounting Office (GAO) in a 1994 report and are useful for summary purposes. Listed after the GAO terms are some of the different services which are implied by the term in quotation marks.

"counseling and assessment":	employment counseling, testing
"remedial education":	basic education skills, GED, ESL
"vocational skill training":	occupational skills, skills training, on-the-job training
"placement assistance":	job development, job search training, job placement, employment assistance
"support services":	occupational licenses, tools, transportation, restoration, rehabilitation technology services, child care, counseling, social services referrals.

[2] Programs operate on various fiscal years and refer to the period in different terms. The number listed is for the most recent complete year.

Program	State Administrator	Target Population(s) and # Served	Eligibility	Services	Service Providers	Funding Based on	Authorization and Current Year Funding Amount
Vocational Rehabilitation Services	DERS Rehabilitation Services Admin.	16,595 individuals with disabilities in SFY 93	individuals with disabilities which are barriers to employment	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	DES staff, subcontractors	federal formula, state appropriation	• Rehabilitation Act: $29,566,186 • SSBG: $1,132,295 • State, Other: $7,167,150 Total: $38,265,631
Job Opportunities and Basic Skills Training (JOBS) Program	DERS JOBS Admin.	11,445 AFDC recipients in SFY 94	AFDC recipients	counseling and assessment, remedial education, vocational skills training, placement assistance, support services	DES staff, ADE, subcontractors	federal formula, state appropriation	• Family Support Act: $9,813,300 • State: $5,583,300 Total: $15,396,600
Job Service	DERS Employment Security Admin.	198,160 job seekers in SFY 1993	job seekers or individuals who can legally work in the U.S.	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	DES staff	federal formula	• Wagner-Peyser Act: $9,961,111

Program	State Administrator	Target Population(s) and # Served	Eligibility	Services	Service Providers	Funding Based on	Authorization and Current Year Funding Amount
Senior Community Service Employment Program	DACS Aging and Adult Admin.	450 older workers in FY1993	55 and older, 125% of LLSIL	counseling and assessment, remedial education,vocational skill training, placement assistance, support services	DES staff, subcontractors	federal formula	• Older Americans Act: $ 2,670,700
Employment Support Services	DERS Rehabilitation Services Admin.	220 individuals with severe disabilities in SFY 1993	Severely disabled; including recipients of develop-mentally disabled services	supported employment services, sheltered employment, work activities	DES staff, subcontractors	federal formula, state appropriation	• Social Services Block Grant: $ 1,078,867 • State: $ 1,185,800 Total: $2,264,667
Veterans Services	DERS Employment Security Admin.	41,548 veterans in SFY 1993	veterans or eligible dependents	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	DES staff	federal formula	• Wagner-Peyser Act: $2,048,000
Trade Adjustment Assistance	DERS Employment Security Admin.	1,640 workers unemployed due to foreign competition in FY 1993	affected industries, as designated by Secretary of USDOL (i.e., mining)	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	DES staff, subcontractors	federal formula	• Trade Act: $2,012,500

Program	State Administrator	Target Population(s) and # Served	Eligibility	Services	Service Providers	Funding Based on	Authorization and Current Year Funding Amount
Food Stamp Employment and Training Program	DERS JOBS Admin.	7,805 Food Stamp recipients in SFY 94	receiving food stamps	placement assistance	DES staff, subcontractors	federal formula, state appropriation	• Food Stamp Act: $1,750,100 • State: $173,900 Total: $1,924,000
Migrant and Seasonal Farmworkers	DERS Employment Security Admin.	6,401 legal alien job seekers in SFY 1993	experience as seasonal farmworker or dependent	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	DES staff	federal formula	• Wagner-Peyser Act: $255,000
Apprenticeship Services	DERS Employment Security Admin.	791 U.S. citizens and legal aliens in 1993	varies according to apprenticeship type	skill training, work experience	DES staff, subcontractors	state appropriation	• State: $116,500

Arizona Department of Education (ADE) Workforce Development Programs

Program	Administration	Target Population and # Served	Eligibility	Services[1]	Service Providers	Funding based on	Authorization and Current Year Funding Amount
Carl D. Perkins Vocational and Applied Technology	Division of Vocational Technological Education and State Board of Directors for Community Colleges	126,010 secondary vocational education students and 42,306 post-secondary students in 1993	economically and academically disadvantaged youth and adults, disabled youth, limited English proficient, single parent, displaced homemaker, incarcerated or offenders, AFDC recipients	counseling and assessment, vocational skill training, support services, professional development, curriculum development, academic integration, TECH PREP	ADE staff, community colleges, subcontractors, secondary schools	federal formula	• Carl Perkins: $ 14,630,200

[1] "Services" can be defined in various ways. The following terms were used by the U.S. General Accounting Office (GAO) in a 1994 report and are useful for summary purposes. Listed after the GAO terms are some of the different services which are implied by the term in quotation marks.

"counseling and assessment":	employment counseling, testing
"remedial education":	basic education skills, GED, ESL
"vocational skill training":	occupational skills, skills training, on-the-job training
"placement assistance":	job development, job search training, job placement, employment assistance
"support services":	occupational licenses, tools, transportation, restoration, rehabilitation technology services, child care, counseling, social services referrals.

Program	Administration	Target Population and # Served	Eligibility	Services	Service Providers	Funding based on	Authorization and Current Year Funding Amount
Adult Education	Division of Adult Education	60,000 persons 16 and older in SFY 1993[2]	over 16 and out of school with no high school diploma or GED, or homeless	remedial education	subcontractors	federal formula, state appropriation	• National Literacy Act: $3,355,702 • State: $3,042.600: Total: $6,398,302
Vocational Education Assistance	Division of Vocational Technological Education	26,361 high school vocational education students in PY '92-'93	vocational education students	vocational skill training	subcontractors	state appropriation	• State: $2,835,000

[2] Programs operate on various fiscal years and refer to the period in different terms. The number listed is for the most recent complete year.

Program	Administration	Target Population and # Served	Eligibility	Services	Service Providers	Funding based on	Authorization and Current Year Funding Amount
Individual Referral Process	Division of Vocational Technological Education Comprehensive Training Unit	1,456 dislocated workers, JTPA participants, JOBS participants, Perkins participants in 1993	dislocated workers, economically disadvantaged, under-employed and unemployed, single parents, displaced homemakers, AFDC recipients	vocational skill training, remedial education	subcontractors	interagency agreements	• Trade Assistance Act: $1,200,000 • JTPA: $780,000 • Carl Perkins: $105,944 • JOBS: $500,000 Total: $2,585,944
Vocational Technological Education Model Programs	Division of Vocational Technological Education	6,627 public school students grades 7-12 in FY 1993	students in public secondary schools	vocational skill training	ADE staff, subcontractors	state appropriation	• State: $2,000,000

Additional Workforce Development Programs

Program	State Administrator	Target Population(s) and # Served	Eligibility	Services[1]	Service Providers	Funding Based on	Authorization and Current Year Funding Amount
Workforce Recruitment and Job Training Program	AZ Department of Commerce, Financial Services Division	GSPED cluster industries, small businesses, rural businesses	businesses moving to Arizona and expanding existing businesses	grants to eligible businesses for recruitment and job training	public and private service providers (i.e. community colleges, businesses)	state appropriation	• State: $3,000,000
School-to-Work Transition	Governor's Office of Community Programs and Public Outreach	high school students and students re-entering high school or seeking GED completion	high school students and students re-entering high school or seeking GED completion	(state plan is still being developed)	staff, sub-contractors	developmental grant based on federal formula, awarded in FY 1993 to create state plan	• School to Work Opportunities Act of 1993: $250,000

[1] "Services" can be defined in various ways. The following terms were used by the U.S. General Accounting Office (GAO) in a 1994 report and are useful for summary purposes. Listed after the GAO terms are some of the different services which are implied by the term in quotation marks.

"counseling and assessment":	employment counseling, testing
"remedial education":	basic education skills, GED, ESL
"vocational skill training":	occupational skills, skills training, on-the-job training
"placement assistance":	job development, job search training, job placement, employment assistance
"support services":	occupational licenses, tools, transportation, restoration, rehabilitation technology services, child care, counseling, social services referrals.

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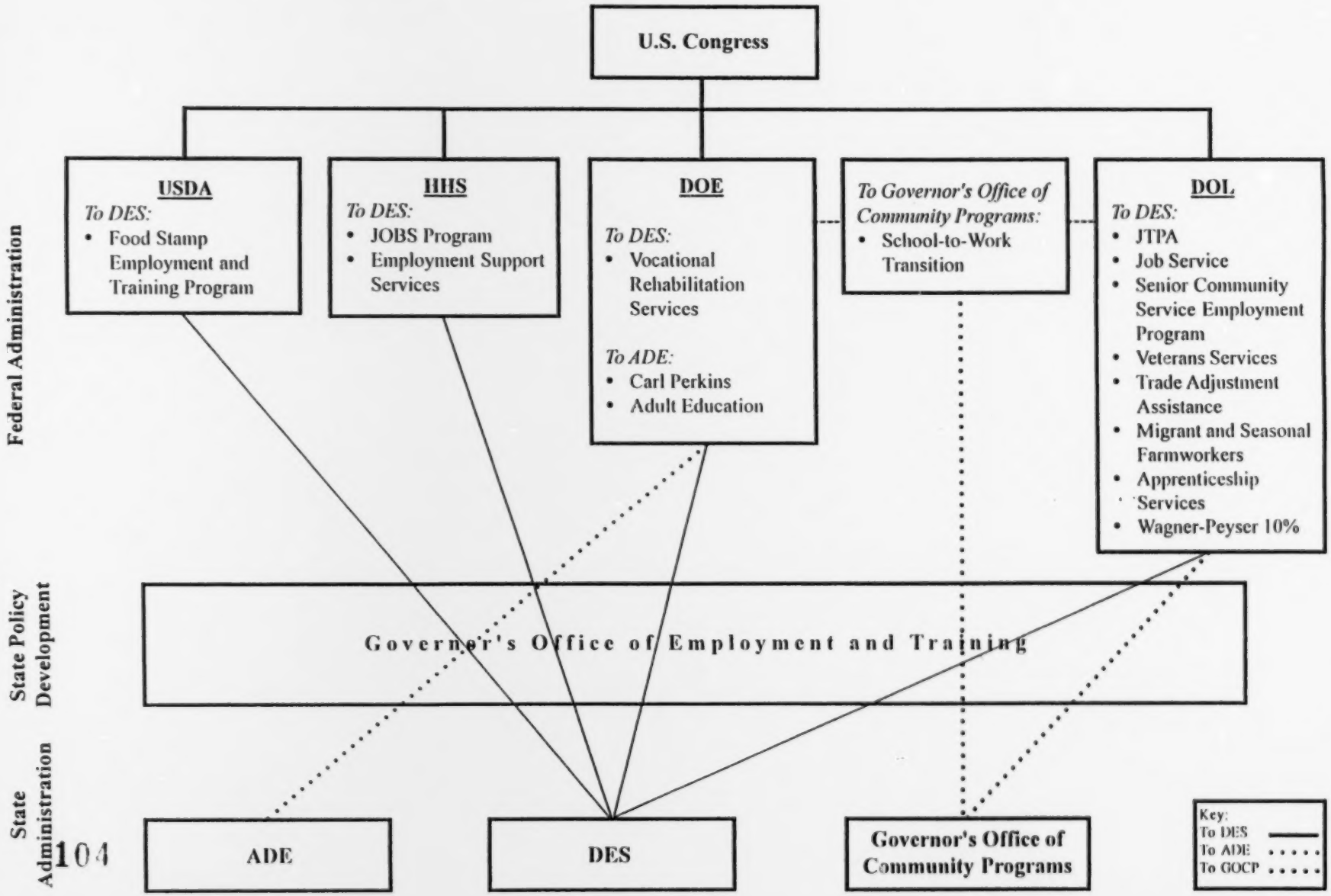
Program	Administration	Target Population and # Served	Eligibility	Services	Service Providers	Funding based on	Authorization and Current Year Funding Amount
Wagner-Peyser Governor's 10% Discretionary Fund	Governor's Office of Community Programs	persons experiencing special barriers to employment; economically disadvantaged	economically disadvantaged and other criteria	vocational skill training, remedial education	subcontractors	10% Wagner-Peyser Funds that come into Arizona	• Wagner-Peyser Act: $983,000
AZ Youth Conservation Program	Arizona State Parks	Arizona residents aged 14-25	AZ residents; cannot quit high school to join or hold another job	vocational skill training, remedial education, support services	staff, sub-contractors	state appropriation, grants, donations, fees for services	not available
Vocational Rehabilitation	Arizona Industrial Commission	420 workers injured on the job in SFY 1993[2]	workers injured on the job	counseling and assessment, remedial education, vocational skill training, placement assistance, support services	subcontractors	state formula	not available

[2] Programs operate on various fiscal years and refer to the period in different terms. The number listed is for the most recent complete year.

Employment and Training in Arizona: Federal Pathways

(How Federal Funds Get to Arizona)



APPENDIX D: ECONOMIC CONDITIONS IN ARIZONA

Table D-1.

Key Issues/Recommendations to Improve Economic Conditions in Arizona

County	Issues/Recommendations
	(Excerpted from the article by Rex, T. (1994, August). County-by-county analysis reveals economic trouble spots, *Arizona Business 41*(8), pp. 1-5.
Apache	The county needs an influx of several thousand jobs. Employment has increased little since the mid-1980s; historically, gains have been erratic. This lack of jobs contributes to a substantial net outflow of young adults aged 18 to 24. ...The biggest economic problem in the county is a shortage of jobs. However, given that the educational attainment in the county is the lowest in the state and that few of the non-employed have much work experience, major educational and job-training programs are prerequisites to increased job creation. This is one of the few places where even low-wage jobs could be advantageous —assuming that existing, unemployed residents fill those jobs.
Cochise	Slight net out-migration of the youngest adults occurs, but modest net inflows are otherwise the rule, the strongest at retirement age. ...The county appears to need a minor boost to job creation in conjunction with some job training for those chronically unemployed. While many of the residents possessing reasonable educational attainment and job skills, and with the industrial mix below average, the focus should be on creating moderate-to-good paying jobs.
Coconino	A job-training program for the relatively few unemployed, combined with policies that encourage that they—not in-migrants—fill jobs already being created would lower unemployment and raise the employment-to-population ratio. The presence of the university and an educated populace could be used in a targeted effort to attract high-paying, high-skilled jobs, boosting the industrial mix and the average wage.
Gila	Job creation has been positive since 1987, but the unemployment rate remains high relative to the national average. Net out-migration of young adults continues, while the county receives a net inflow of retirement-aged and slightly younger people. ...A range of jobs to meet the needs of the unemployed and those youths who otherwise would leave the community need to be created. As in most counties, these jobs will be of little value to existing residents without a job-training program and policies that urge hiring local people rather than in-migrants for the newly created jobs.
Graham	Graham County ranks near the bottom of the Arizona counties on most economic measures. It has economic difficulties of all types... Net out-migration of young adults, some net in-migration of retirement\age people and very slight net out-migration of others occurs. ...The educational attainment of the county's residents, while average for Arizona's rural counties, is a little below the national average. Job training and more jobs paying average wages would be starting points for a county needing considerable economic assistance.

Table D-1. —*continued*

County	Issues/Recommendations
	(Excerpted from the article by Rex, T. (1994, August). County-by-county analysis reveals economic trouble spots, *Arizona Business 41*(8), pp. 1-5.
Greenlee	Greenlee County's economic weakness is its narrow industrial base, being highly dependent on mining. On most economic measures, [the county] ranks at the top of Arizona's rural counties. Economic diversification is the prime need in Greenlee County.
La Paz	Job growth has been erratic and rather low in recent years. Low-wage jobs and an undiversified economy seem to be greater problems, however. ...The low wages largely result from an industrial mix more weighted toward low-wage industries (especially agriculture) than any other county except Yuma. This, in turn, contributes to one of the state's highest poverty rates. ...Since educational attainment is quite low, increased education and job training need to be the first priority. Then, better jobs in diverse industries need to be created.
Maricopa	Maricopa County, with nearly 60 percent of the population and upwards of 70 percent of most economic activity, dominates Arizona and, in most regards, has by far the strongest, healthiest economy in the state....Job growth [has been] greater than needed to provide employment to existing residents. Thus, substantial net in-migration into Maricopa County, especially of young adults, is necessary to fill all the jobs created. Economic development in Maricopa County should be concentrated on...creating quality jobs and enhancing the quality of life... A statewide effort should be made to move more of the new lower-wage jobs to certain other locations outside the Phoenix area.
Mohave	Mohave in the most rapidly growing county in Arizona, based on employment and population. However, the county is continuing to experience a downward trend in wages and industrial mix. Net in-migration is weak among young adults, but strong in all other age groups, peaking at retirement age....Mohave County needs an economic development plan that emphasizes quality, not quantity.
Navajo	The economic situation in Navajo County is similar to, but less extreme than, that in Apache County. ...The primary actions needed to improve economic health and well-being in Navajo County are the same as those in Apache County.
Pima	Pima County ranks between Maricopa County and each of the other counties in most economic regards....Like Maricopa County, Pima County does not lack jobs; more than enough are created on average to meet the needs of the existing population....Pima County's economic difficulties revolve around an average wage that fell in the 1980s relative to comparison areas....An industrial mix like that of the typical Arizona rural county—tilted to low-wage industries—is partially responsible for these low wages....A relatively highly educated populace and the university should be assets in the county's attempts to improve economic conditions. Emphasis should be on creating high-quality, high-paying jobs.
Pinal	Twin problems with agriculture and mining a decade ago forced changes in Pinal County's economy, causing it to lag behind on most measures. The county's biggest difficulties revolve around a relatively high unemployment rate and one of the lower working-age employment-to-population ratios in the state.... [However] employment growth in Pinal County easily exceeds the national average....The county's residents need to improve their educational attainment and receive job training. Then, policies need to be implemented so that these newly trained residents receive the jobs already being created. The county also needs to diversify its economy.

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Table D-1.—*continued*

County	Issues/Recommendations
	(Excerpted from the article by Rex, T. (1994, August). County-by-county analysis reveals economic trouble spots, *Arizona Business 41*(8), pp. 1-5.
Santa Cruz	The economy of Santa Cruz County has particular problems that are related to low wages and unemployment....Since job creation is strong but the unemployment rate remains high and the working-age employment-to-population ratio decreased a little in the 1980s, in-migrants must be obtaining many of the new jobs. Thus, as in many counties, a job-training program, and policies that encourage giving new jobs to trained residents are badly needed.
Yavapai	Population and employment growth are quite rapid. Job creation is far more than can be filled by the existing population, resulting in substantial net in-migration of all working-age populations but college-age people. The greatest net inflows are at retirement age....With educational attainment the fourth highest in the state, the goal of better jobs seems feasible. Like Mohave County, Yavapai County needs an economic development plan that emphasizes quality, not quantity.
Yuma	Yuma is another example of a county experiencing rapid growth but not benefiting from improved economic health or personal well-being....Despite net in-migration of all age groups and rapid job growth, serious economic problems remain in Yuma County. Improved educational attainment, job training and policies to assist local residents to obtain jobs all are needed. However, the county also needs to attract higher-paying industries.

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